

(No Model.)

R. F. LUDWIG.  
CROWN ANCHOR.

No. 421,947.

Patented Feb. 25, 1890.

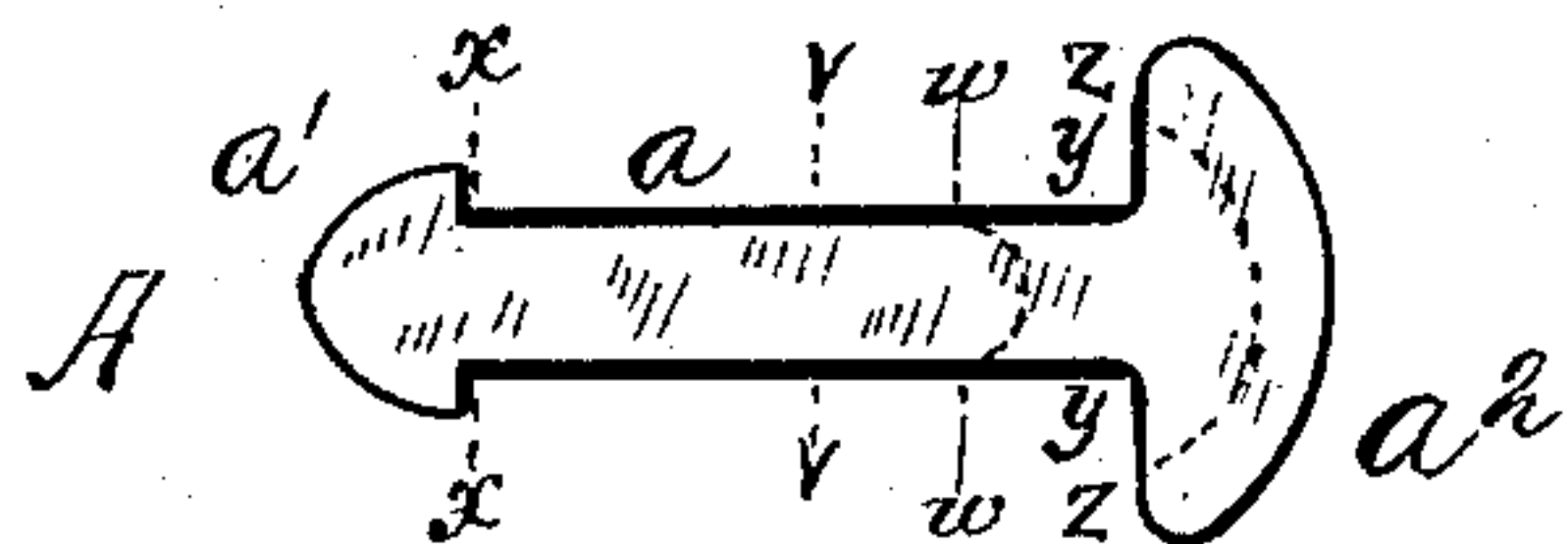
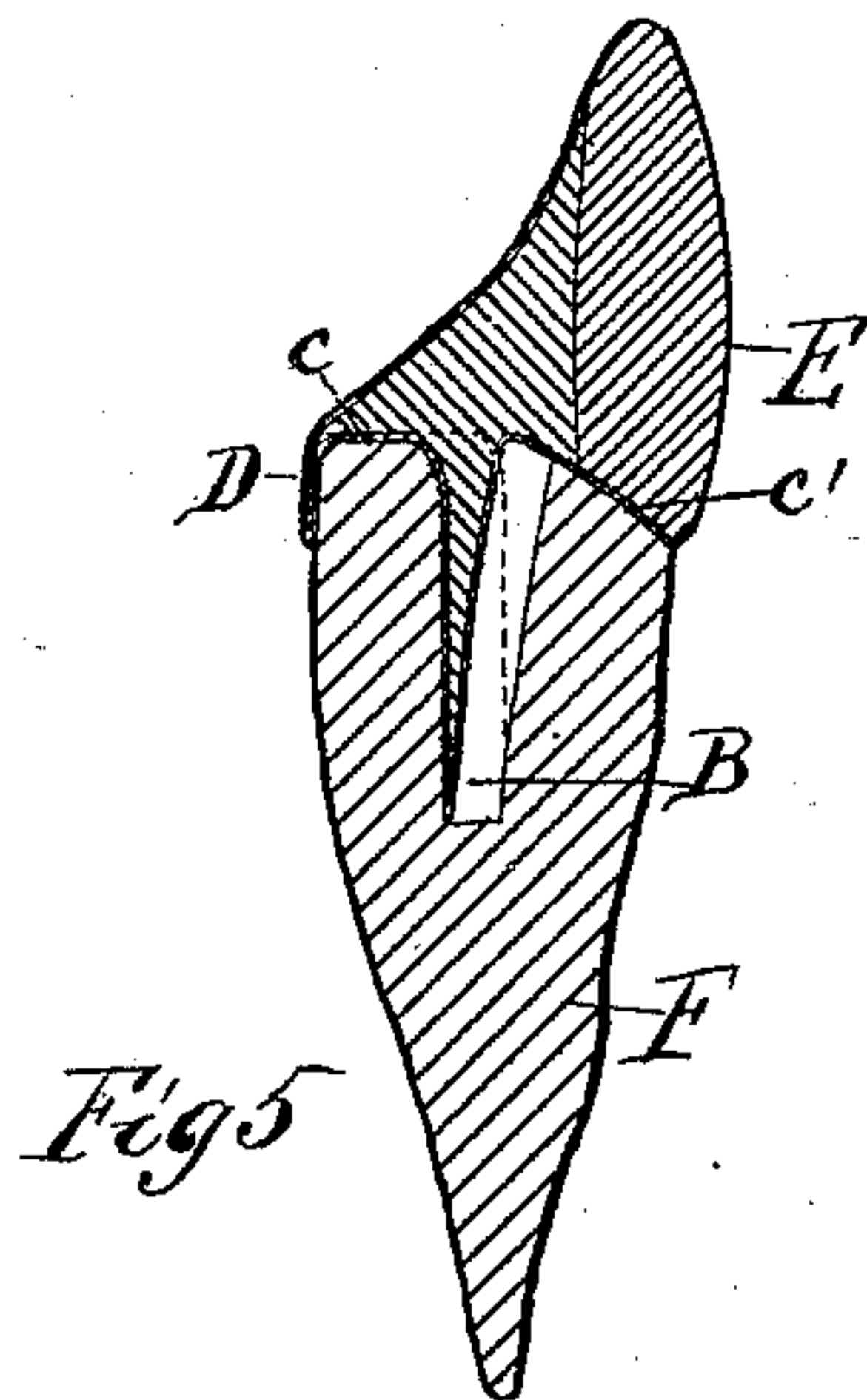
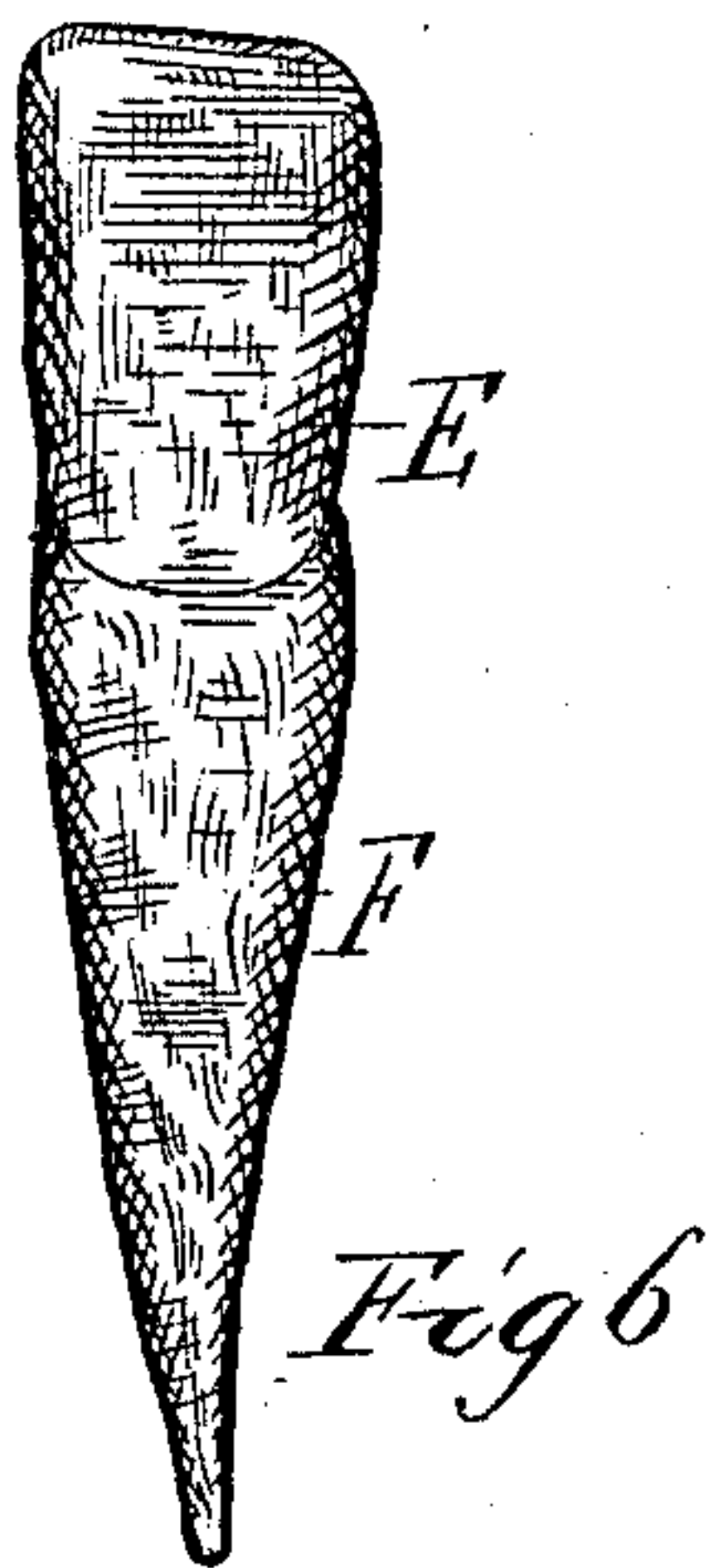


Fig 1

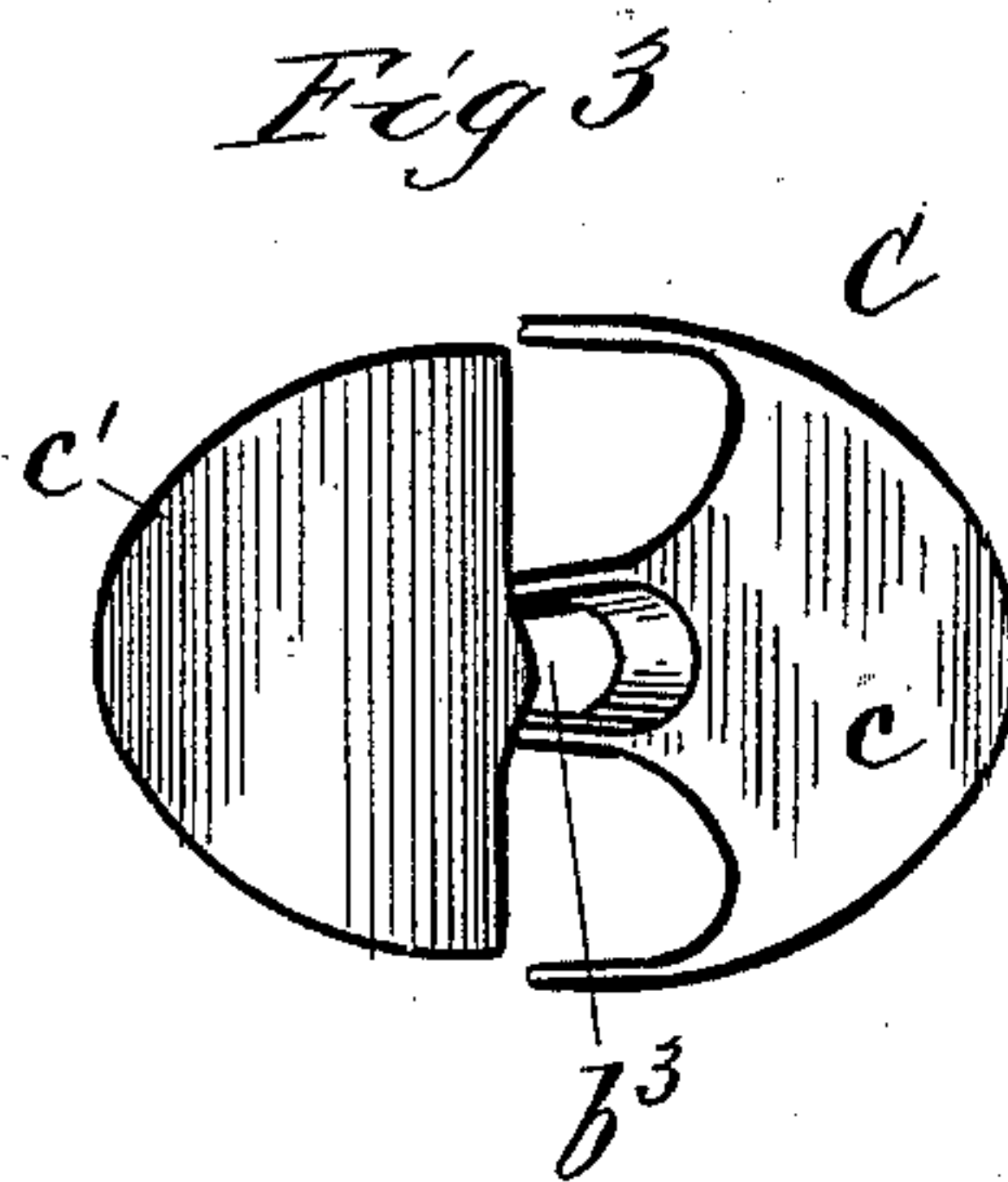
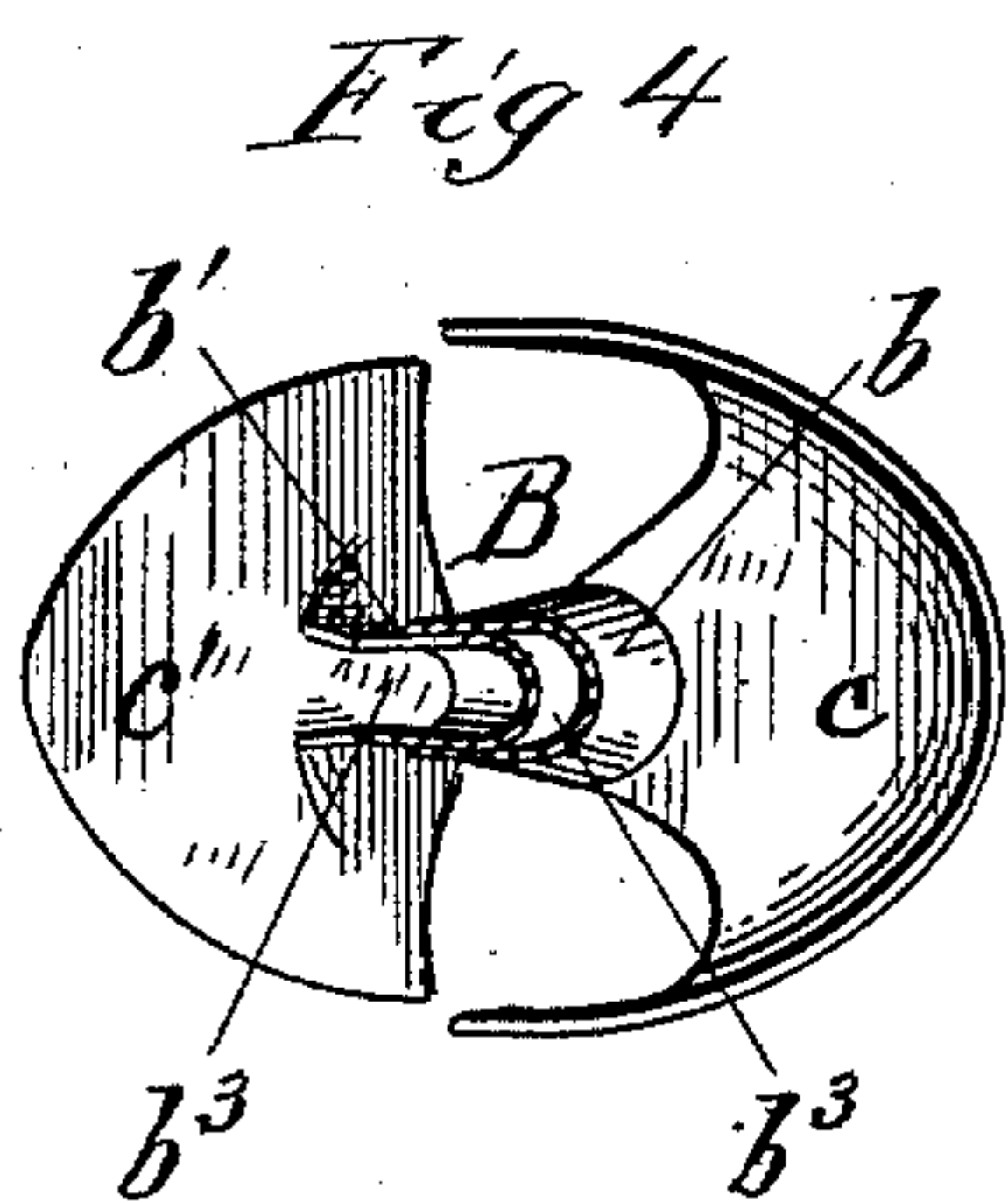
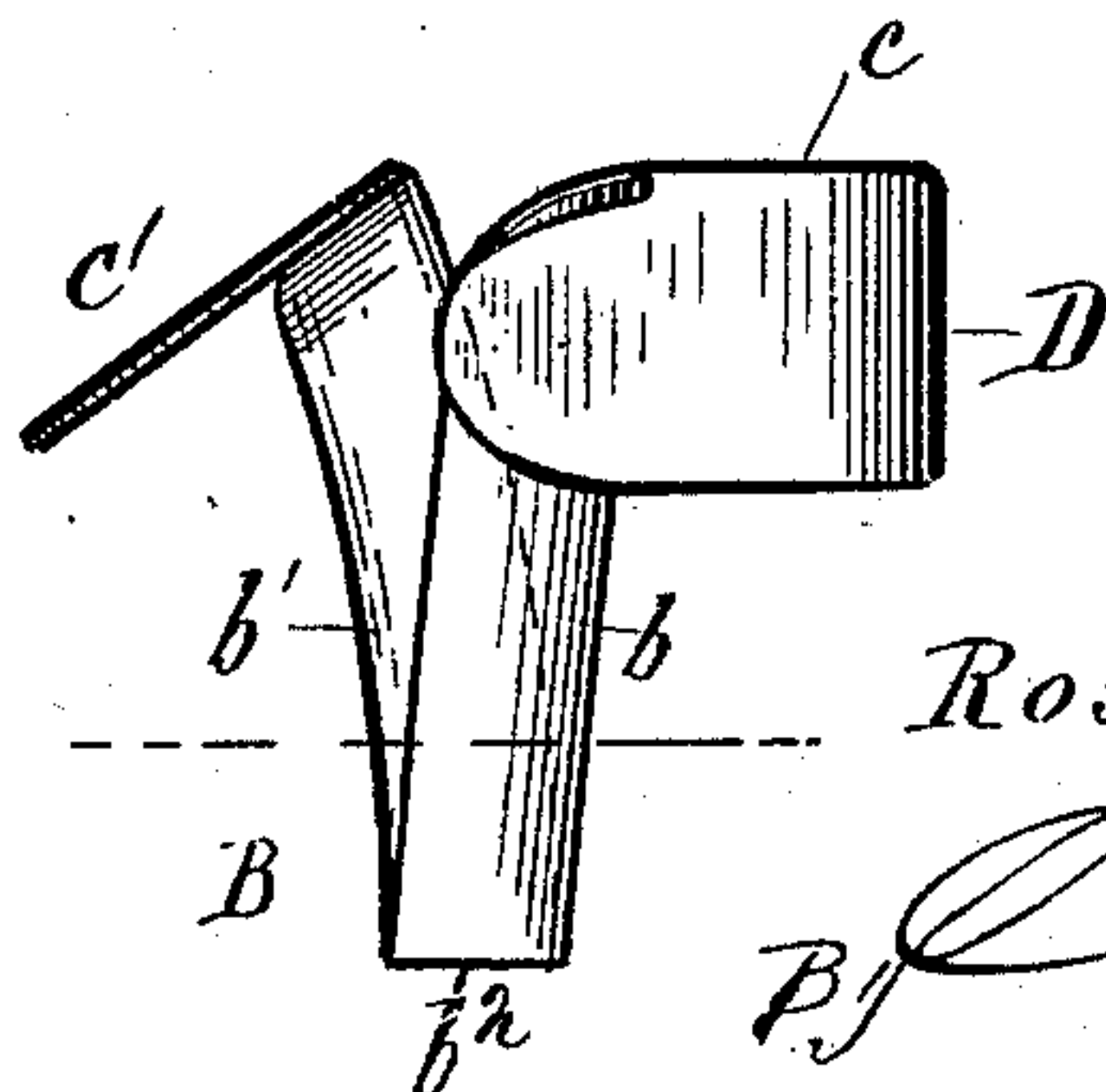


Fig 2



Witnesses  
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# UNITED STATES PATENT OFFICE.

ROSCOE F. LUDWIG, OF CHICAGO, ILLINOIS.

## CROWN-ANCHOR.

SPECIFICATION forming part of Letters Patent No. 421,947, dated February 25, 1890.

Application filed May 22, 1889. Serial No. 311,736. (No model.)

*To all whom it may concern:*

Be it known that I, ROSCOE F. LUDWIG, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Crown-Anchors, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan view of the blank from which the crown-anchor is formed; Fig. 2, a side elevation of the crown-anchor formed up from the blank shown in Fig. 1; Fig. 3, a bottom plan view of the crown-anchor; Fig. 4, a plan section of the same, taken on the line 1 1 of Fig. 2; Fig. 5, a vertical sectional view showing the denture secured to the roots, and Fig. 6 a front elevation of the same.

Like letters refer to like parts in all the figures of the drawings.

My invention relates to crown-anchors for artificial dentures, and has for its object to simplify and cheapen and at the same time improve the construction of these articles. Heretofore these crown-anchors have been constructed of three separate pieces—to wit, the pin which enters the root or stump, the cap or base which covers the exposed or under surface of the stump, its lower surface being adapted to receive the crown, and, third, the band which surrounds the rear or inner side of the stump—these three pieces being secured together by soldering to form a complete anchor. This mode of construction is obviously slow, difficult, and expensive, and the anchor produced thereby defective in strength. To overcome these difficulties I form the entire anchor in a single piece from a suitable blank, which is so bent and shaped as to produce a crown-anchor which comprises in a single unitary structure the pin, the cap, and the band, which structure shall possess various features of advantage, which will be hereinafter more particularly pointed out.

In the drawings, A represents the blank from which the crown-anchor is formed, said blank being cut from a flat sheet of metal, preferably platinum. In the form shown the blank consists of a shank portion  $a$ , furnished at one end with a head or enlargement  $a'$  and at the other end with a head or enlargement

$a^2$ , which latter is of dimensions considerably greater than the head or enlargement  $a'$ . In order to form the pin this blank is folded upon itself along the line  $v v$ , so that the two halves of the shank  $a$  rest upon each other, and the shank portion is then bent upon itself along the line  $w w$ , thereby forming grooves along the same. In this manner there is produced a pin B, consisting of two members  $b$  and  $b'$ , flexibly united at their apex at  $b^2$ , and each provided with a groove  $b^3$ , so that the said pin is a hollow pin. To form the cap which covers the base of the root, the heads or enlargements  $a'$  and  $a^2$  are bent at right angles to the shank portion  $a$  along the lines  $x x$  and  $y y$ , respectively, and when so bent it will be seen from an inspection of Fig. 3 of the drawings that they form a cap or plate C, which will cover and protect the exposed under face of the root, as shown in Fig. 5, said cap or plate being composed of two members  $c$  and  $c'$ . As hereinbefore stated, the head or enlargement  $a^2$  is larger than the head or enlargement  $a'$ , and the band D is formed from the head or enlargement  $a^2$  by bending it at a right angle along the line  $z z$ .

It is immaterial which one of the elements composing the complete crown-anchor is first formed, as it is obvious that the band may be bent up first, if desired, or the heads  $a'$  and  $a^2$  may be bent up to form the cap before forming the pin or band. It will be observed that the anchor thus formed may be bent to fit any shaped root, since the pin B and cap C are composed of two members, which may be separated from each other by any desired distance to increase or diminish the size of the pin and cap. In like manner the size and form of the band D may be varied by changing the position of the line  $z z$  along which it is bent and varying the angle of relation as desired.

E represents the tooth-crown, which is soldered to the crown-anchor in the usual manner, being secured to the under face of the cap C.

F represents the prepared root, which has been adapted to receive the crown-anchor. The usual cement is employed to connect the crown-anchor to this root. It will be observed that the pin B, being hollow, presents a much greater surface for the cement and gives it a much firmer hold, thereby securing the crown-



anchor more firmly to the root. Moreover, this hollowness of the pin makes it very light compared with the ordinary form, which employs a solid pin of considerable weight.

5 It is obvious that various modifications in the details of construction may be made without departing from the principle of my invention, and I therefore do not wish to be understood as limiting myself strictly to the precise details hereinbefore described, and shown in  
10 the drawings.

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

15 1. The hereinbefore-described blank for crown-anchors, consisting of the shank portion  $a$ , provided at its respective ends with the heads  $a'$  and  $a''$ , substantially as and for the purposes specified.

20 2. The hereinbefore-described crown-anchor, comprising in a single unitary structure the pin, the cap or plate, and the band, and formed of a single piece of sheet metal, substantially as and for the purposes specified.

3. In a crown-anchor, the combination, with 25 the pin composed of two members  $b$  and  $b'$ , flexibly connected at  $b^2$ , of the cap or plate  $C$ , composed of the two members  $c$  and  $c'$ , connected to the respective ends of the members  $b$  and  $b'$ , substantially as and for the purposes 30 specified.

4. In a crown-anchor, the hollow pin  $B$ , curved transversely to form the grooves  $b^3$ , substantially as and for the purposes specified.

5. In a crown-anchor, the combination, with 35 the pin  $B$ , composed of the two curved members  $b$  and  $b'$ , flexibly connected at  $b^2$ , of the cap or plate  $C$ , composed of the two members  $c$  and  $c'$ , connected, respectively, to the free ends of the members  $b$  and  $b'$ , and the band 40  $D$ , extending upward from the margin of the member  $C$ , substantially as and for the purposes specified.

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Witnesses:

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