

(No Model.)

2 Sheets—Sheet 1.

F. A. BREWER & W. S. HOW

FORCEPS FOR APPLYING RUBBER DAM CLAMPS.

No. 315,706.

Patented Apr. 14, 1885.

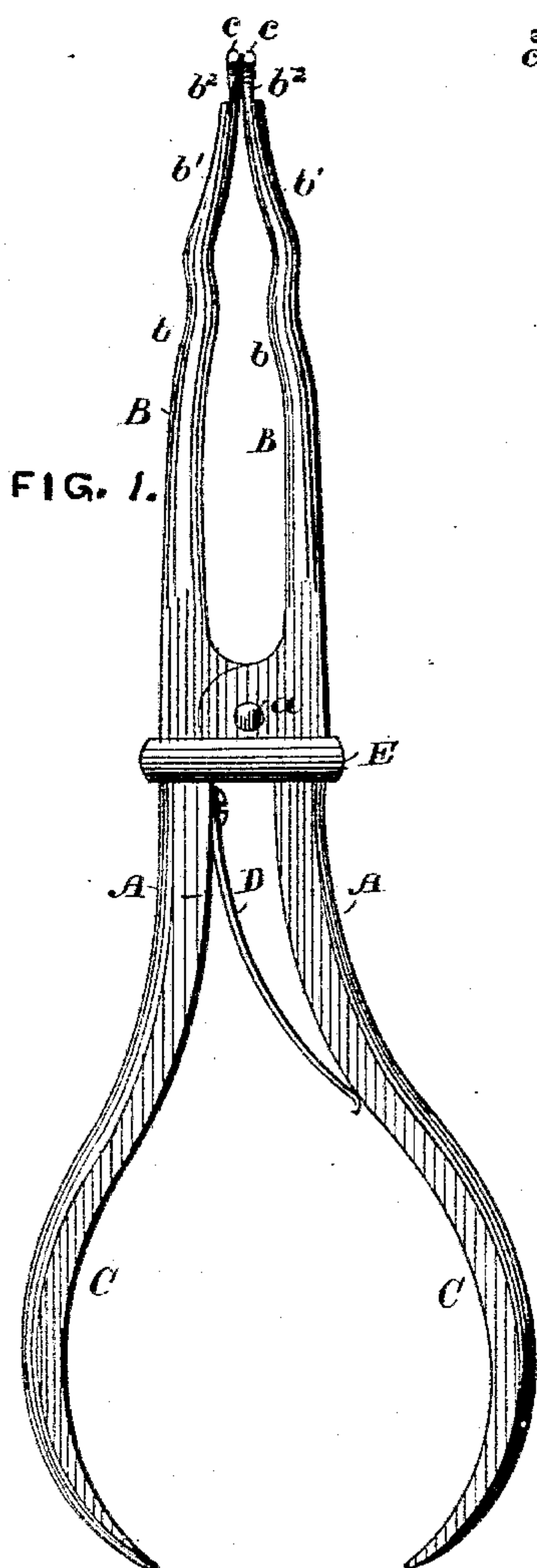


FIG. 1.

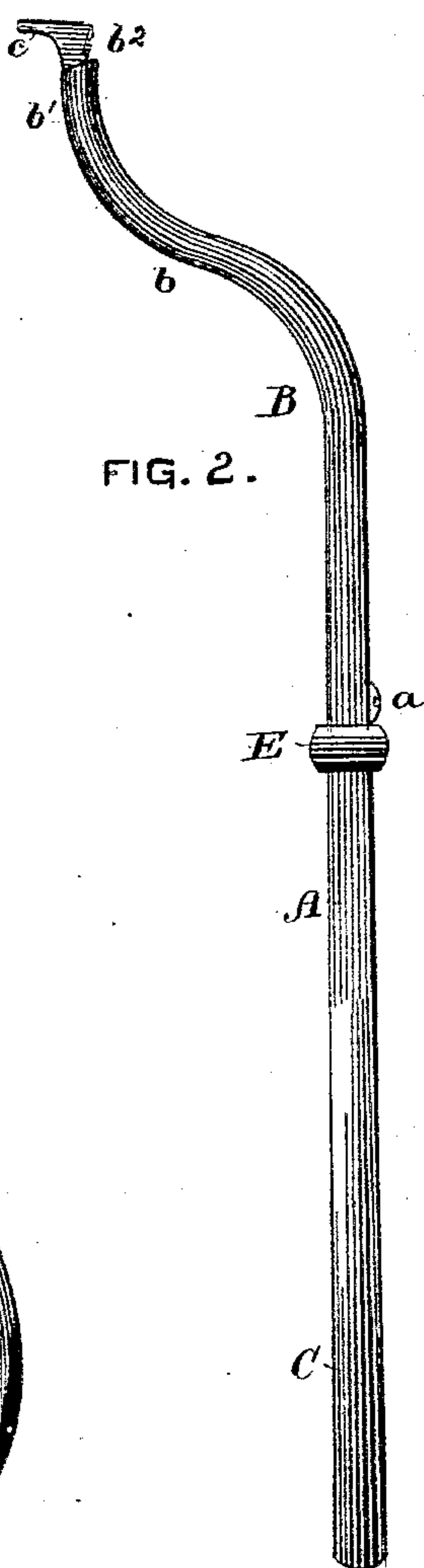


FIG. 2.

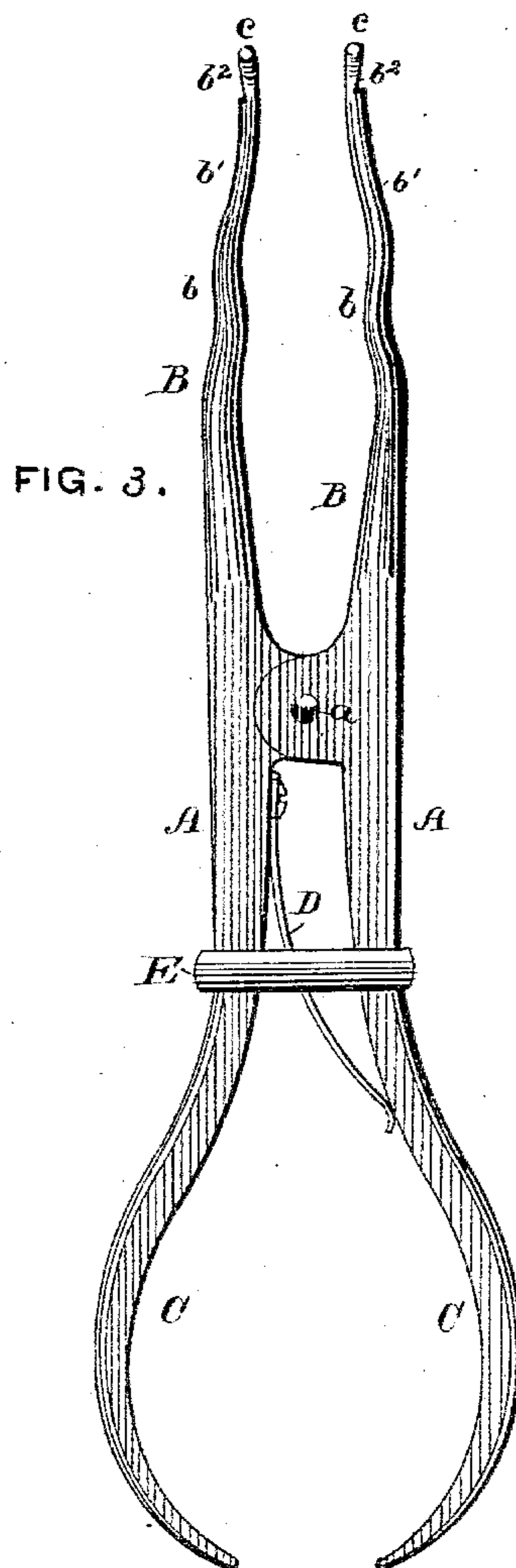


FIG. 3.

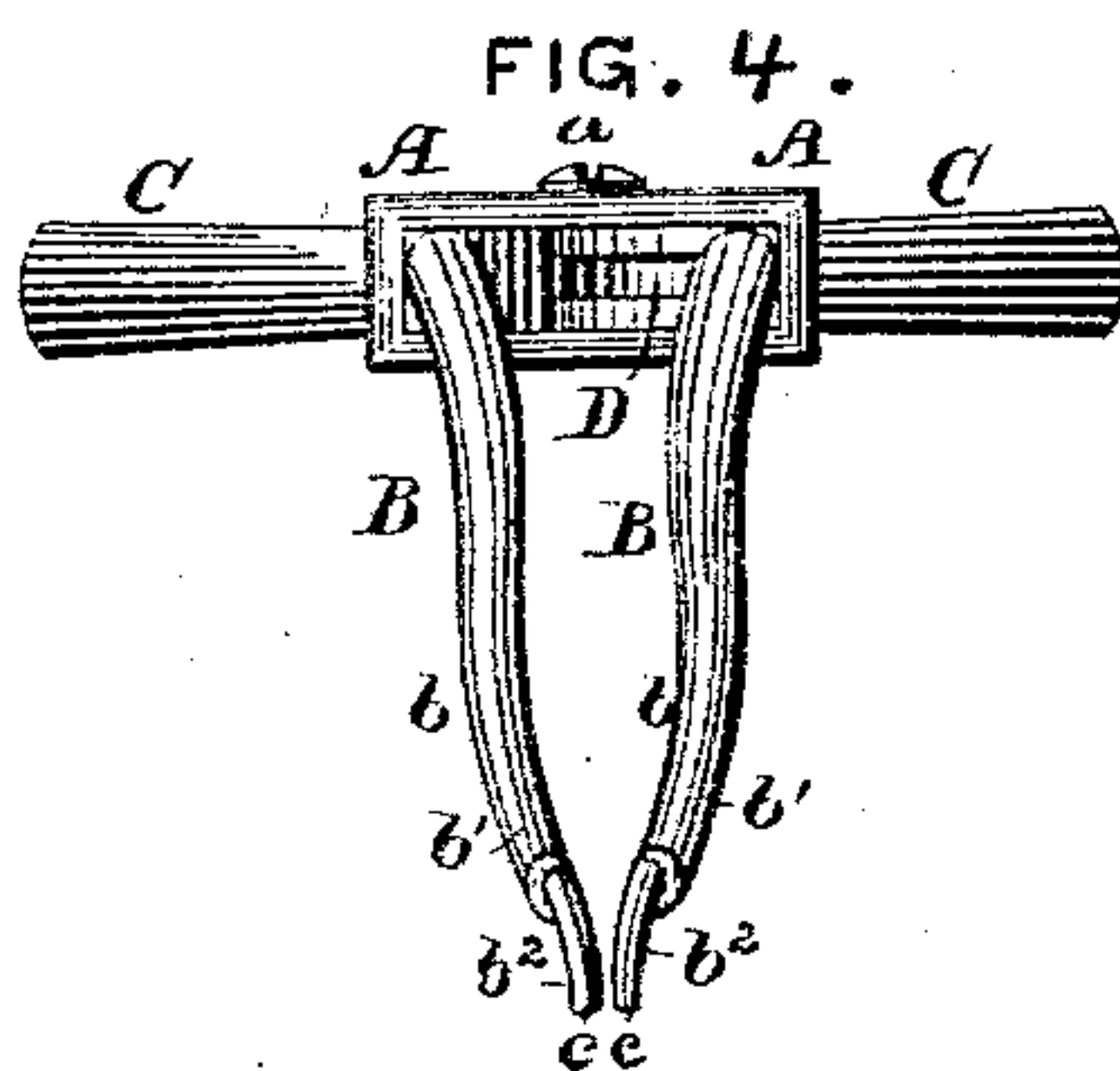


FIG. 4.

WITNESSES.

Kellie Holmes.  
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INVENTORS:

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Francis A. Brewer,  
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by their attys  
Baldwin, Hopkins & Weston.

(No Model.)

2 Sheets—Sheet 2.

F. A. BREWER & W. S. HOW.

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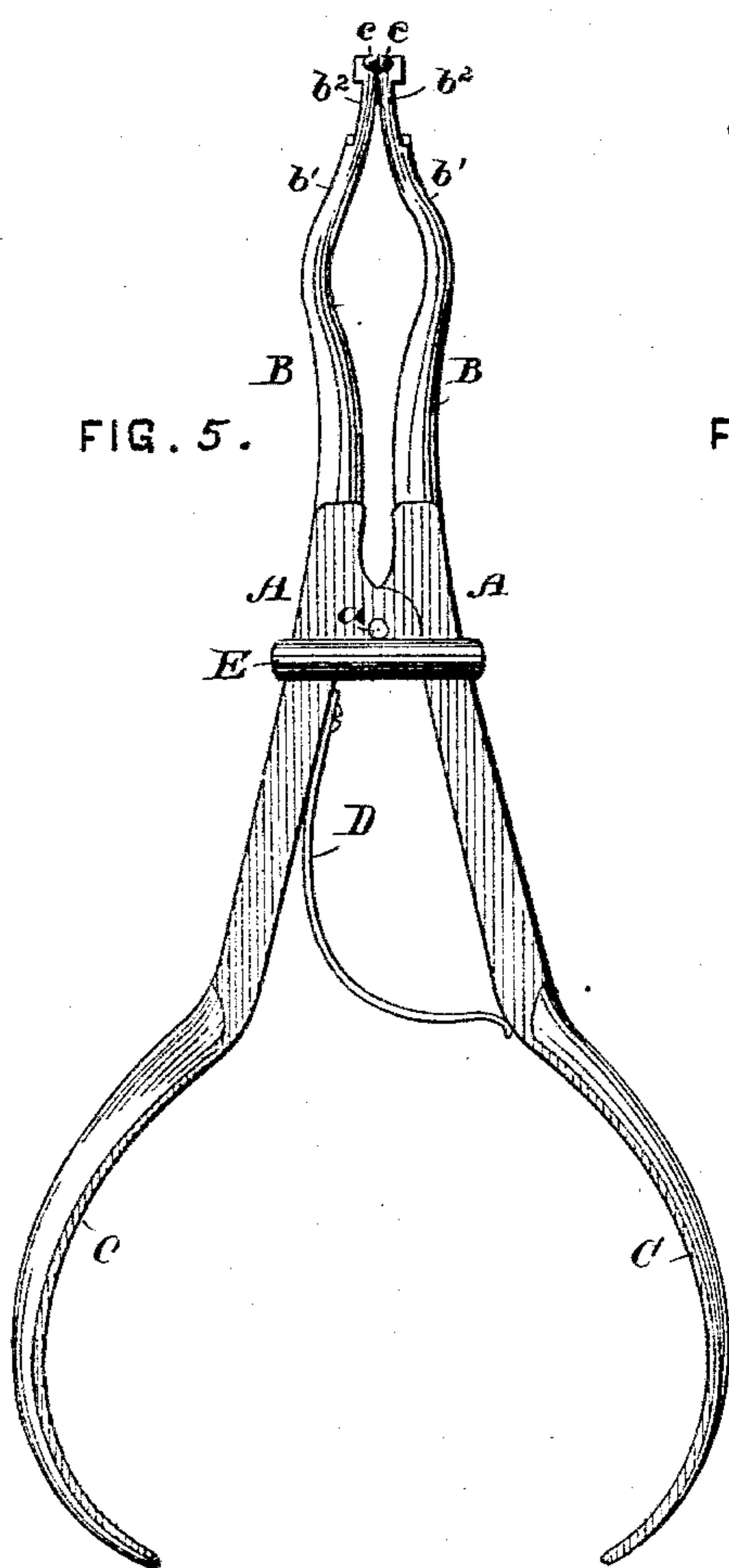


FIG. 5.

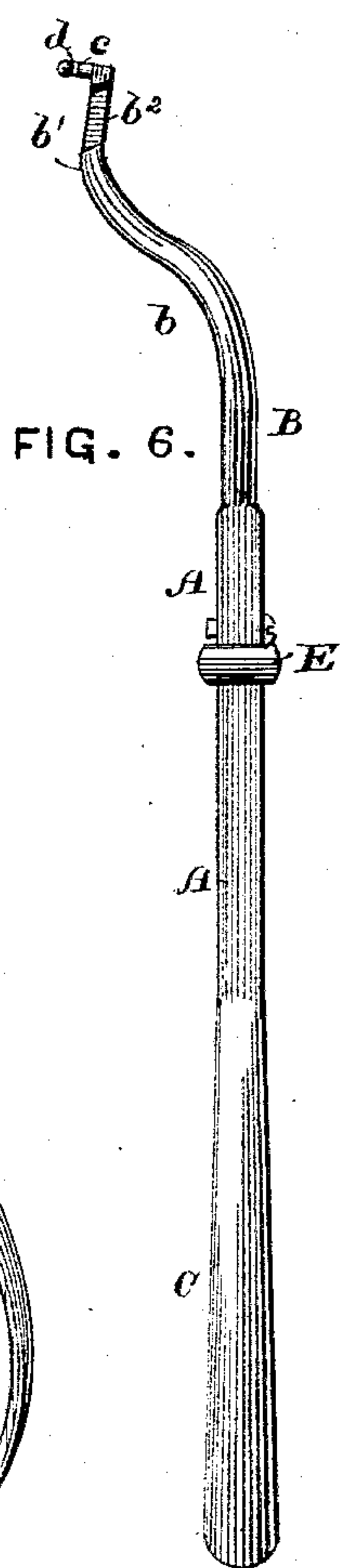


FIG. 6.

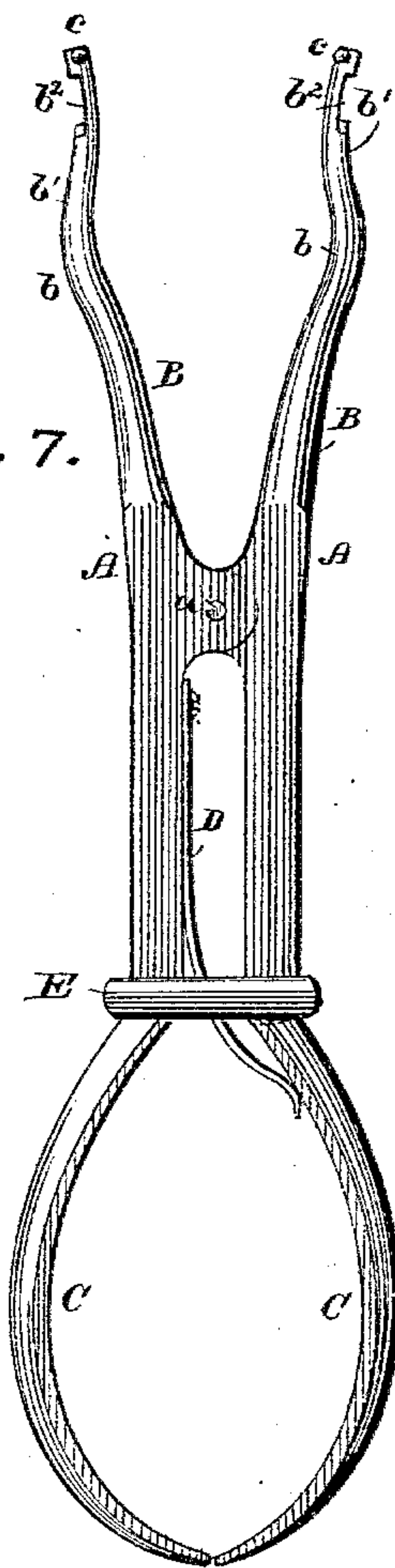


FIG. 7.

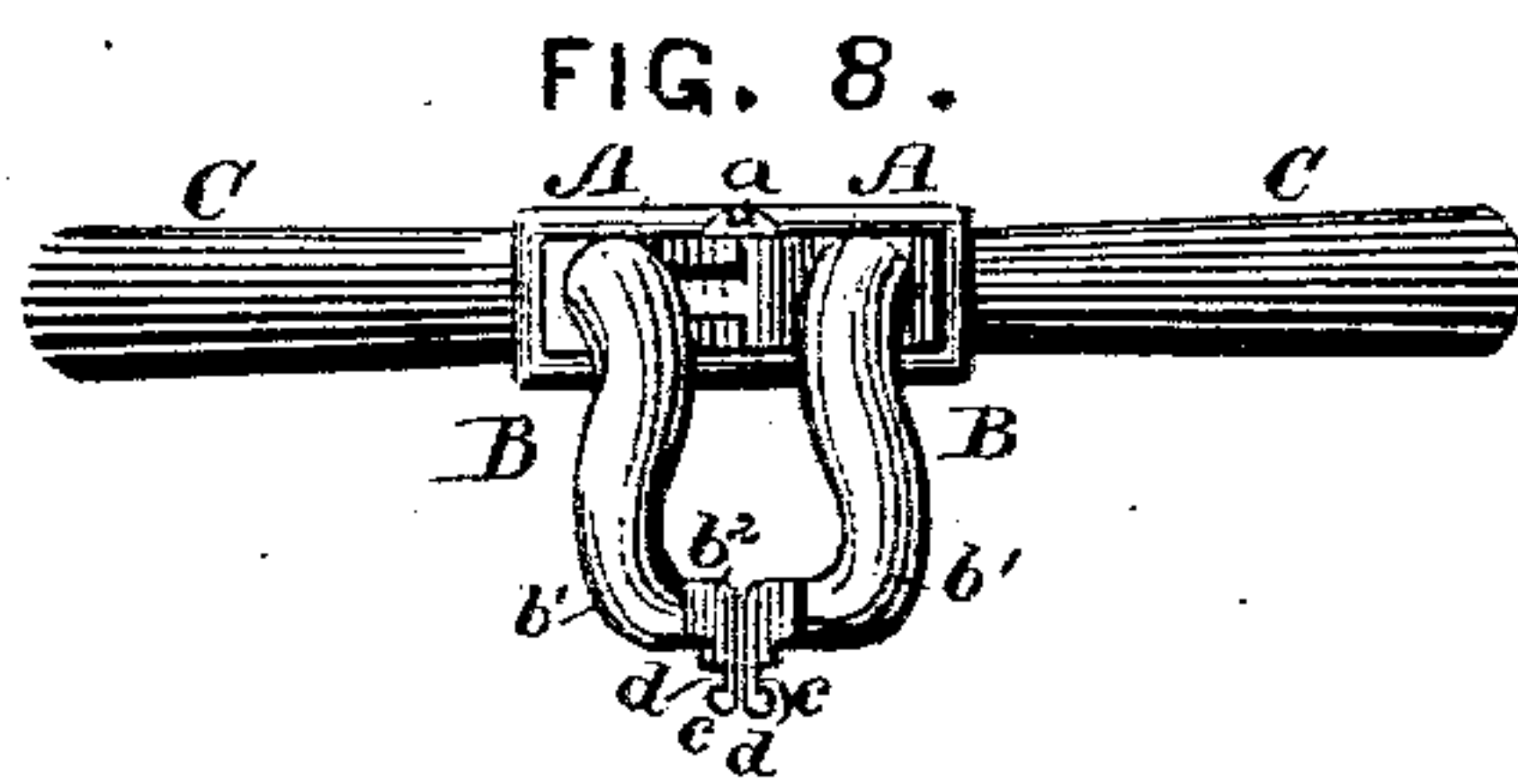
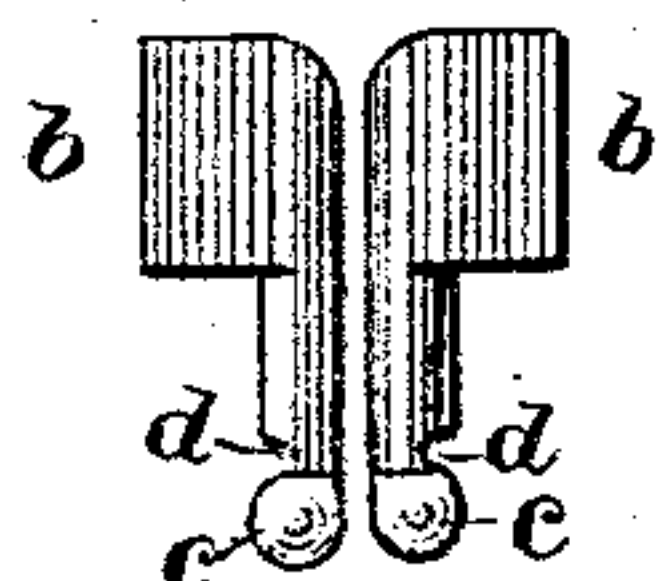


FIG. 8.

FIG. 9.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## FORCEPS FOR APPLYING RUBBER-DAM CLAMPS.

SPECIFICATION forming part of Letters Patent No. 315,706, dated April 14, 1885.

Application filed February 28, 1885. (No model.)

*To all whom it may concern:*

Be it known that we, FRANCIS A. BREWER, of San Francisco, California, and W. STORER HOW, of Philadelphia, Pennsylvania, have jointly invented certain new and useful Improvements in Forceps for Applying Rubber-Dam Clamps, of which the following is a specification.

Our invention relates to the forceps employed by dentists in the use of rubber-dam clamps. Such clamps are familiar to and in general use among dentists, and are of several different types, each of which requires a special form of forceps to apply and remove them.

The object of our invention is to provide an improved forceps by which the prominent types of rubber-dam clamps now in use—such as the Allan (unperforated) and the Palmer and the Elliott (perforated) clamps—may be operated when applied and removed by a single forceps, which we term a “universal” forceps for rubber-dam clamps.

The subject-matter herein claimed as of our joint invention is first particularly described in detail, and is then distinctly set forth at the close of the specification.

In the accompanying drawings, Figure 1 is a plan view of one form of our improved forceps. Fig. 2 is a side or edge view thereof, showing the bayonet shape given to the operating beaks or points. Fig. 3 is a plan view showing the beaks or points as partially separated, as in expanding and applying a clamp; and Fig. 4 is a front view of the operating-beak or point end of the instrument. Figs. 5, 6, 7, and 8 are respectively corresponding views to Figs. 1, 2, 3, and 4 of a modified form of our improvements, and the form which we prefer to employ. Fig. 9 is an enlarged view of the operating-beak or point end of the modified form of instrument last mentioned, to show more particularly the notches in the clamp-operating studs or pins.

Our improved forceps are composed of two members, A A, pivoted together at *a*, as usual, said members A A at one end being formed into beaks or operating-points B B, for engag-

ing and operating the rubber-dam clamps, while the other ends of said members are constructed, generally, of a bow or curve shape, to constitute the handles C C, by which the beaks or points are separated to expand the clamp in applying it to the tooth. As usual, a spring, D, acts to close the beaks or points, and it requires pressure upon the handles to open them. The instrument is likewise provided with a slide or ring, E, by which, when the beaks or points are open or separated against the action of the spring D, they may be retained in that position and until the clamp is properly fitted over the tooth, when the sliding forward of the slide or ring E releases the beaks or points and permits the spring-clamp to fasten itself upon the tooth. The forceps in front of the pivot *a*—that is to say, the operating end—is given a bayonet form, and the bayonet-point is swelled below the bend *b*, so as to allow it to go down over the tooth in front of the one to which the clamp is to be applied. This sinuous bayonet form is what is known as the “Bowman-Allan,” and is not claimed herein by us. The beaks or points B B have their ends *b' b'* extended forward in a plane substantially parallel with the longitudinal line of the handles of the main part of the instrument, and when the Allan and similar types of clamps are to be used they are expanded or separated by placing said ends *b' b'* of the beaks or points within the spring-clamp, which, upon pressure being applied to the handles of the instrument, is expanded by the pressure of said ends *b' b'* against the sides of the clamp, whereby the clamp may be fitted over the tooth to which the rubber dam is applied, in order to hold said dam in place. The sides of the ends *b' b'* which act upon the inner sides of the members of the spring-clamp may be plain, or, which is preferred, they may be recessed or notched or shouldered at *b<sup>2</sup> b<sup>2</sup>* in order to obtain a better and more secure hold upon the spring-clamp.

In order to adapt the forceps to the Palmer and other similar perforated clamps, which are expanded or applied by means of forceps



having studs or pins on the projecting beaks or points, we provide the bayonet beaks or points B B with studs or pins or projections *c c*, which project at right angles substantially to the longitudinal line of the instrument, as clearly shown in the drawings. In use studs or pins *c c* are fitted in holes, perforations, or sockets of the clamp to expand its members, and when the clamp is properly fitted to the tooth the pressure upon the forceps is released. This allows the clamp to fasten itself upon the tooth and the forceps to be removed, whereupon the operation of the dentist in treating or operating upon the tooth is proceeded with.

By constructing the bayonet forceps with the operating studs or pins *c c* we have adapted one instrument for the operation of the several different prominent types of rubber-dam clamps, or, in other words, we have provided, as stated before, what we call a "universal" forceps for rubber-dam clamps.

In some forms of clamps—as in some of the Palmer types, for instance—it is desirable to provide the studs or pins *c c* with a notch, *d*, to engage the edge of the opening in the clamp, whereby the projection of the end of the stud or pin *c* into the gum of the patient is avoided, as the notch of the pin engages the edge of the clamp, and in applying the clamp any pressure that may be necessary does not drive

the clamp up upon the stud or pin so as to allow a projecting point to wound the gum. The studs or pins *c c* are necessarily of some length, because in the construction of the Palmer and similar clamps one or both of the openings, instead of being a plain opening through one thickness of the spring metal composing the clamp, is formed by bending a portion of the metal so as to form a socket of considerable depth.

We claim herein as our invention—

1. A rubber-dam-clamp forceps having a bayonet operating end provided with studs or pins arranged at an angle to the longitudinal line of the forceps, substantially as described.

2. The rubber-dam-clamp forceps having operating pins arranged at an angle to the longitudinal line of the forceps, said studs or pins being notched or shouldered, substantially as described.

In testimony whereof we have hereunto subscribed our names.

FRANCIS A. BREWER.

W. STORER HOW.

Witnesses to signature of Francis A. Brewer:

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SPENCER S. SKEELS.

Witnesses to signature of W. Storer How:

J. A. B. WILLIAMS,

G. R. ROBINSON.