

No. 827,507.

PATENTED JULY 31, 1906.

L. H. CRAWFORD.  
DENTAL INSTRUMENT.

APPLICATION FILED NOV. 18, 1903. RENEWED JAN. 6, 1906.

Fig. 1.

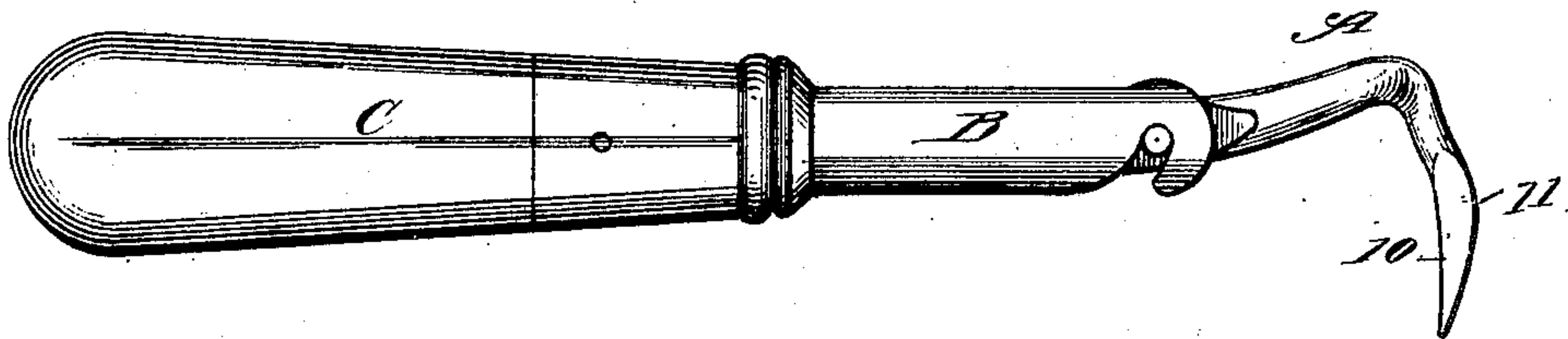


Fig. 2.

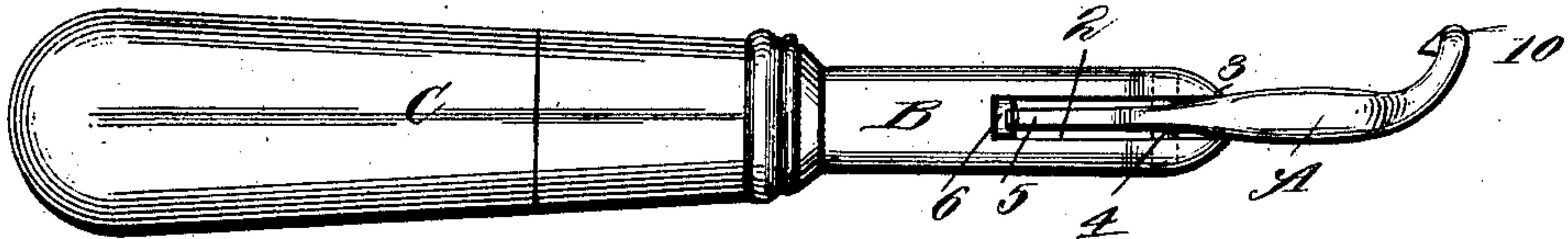


Fig. 3.

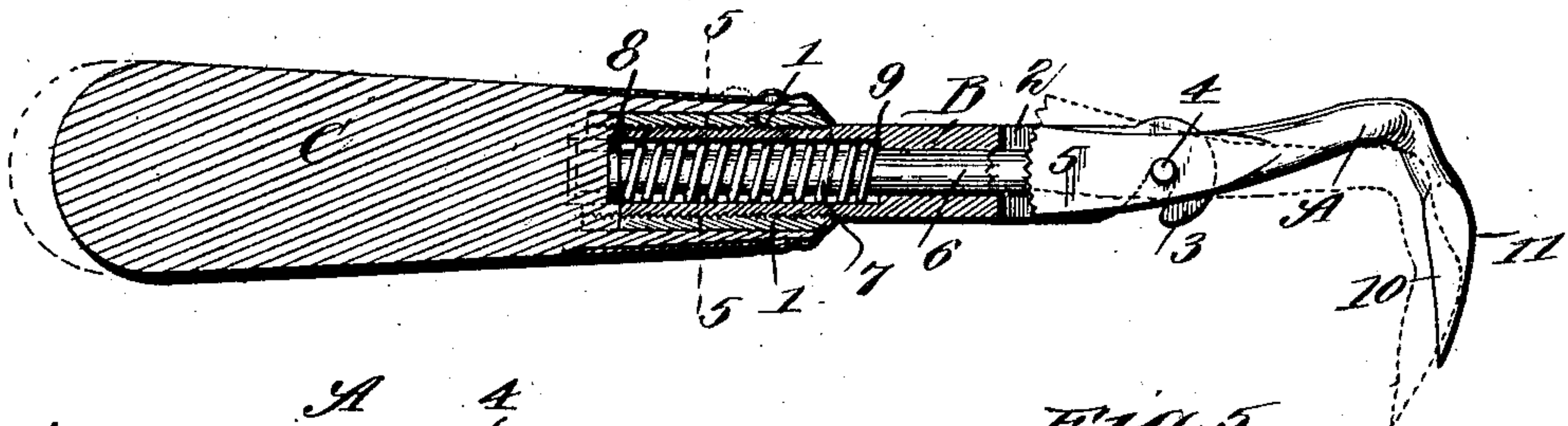


Fig. 4.

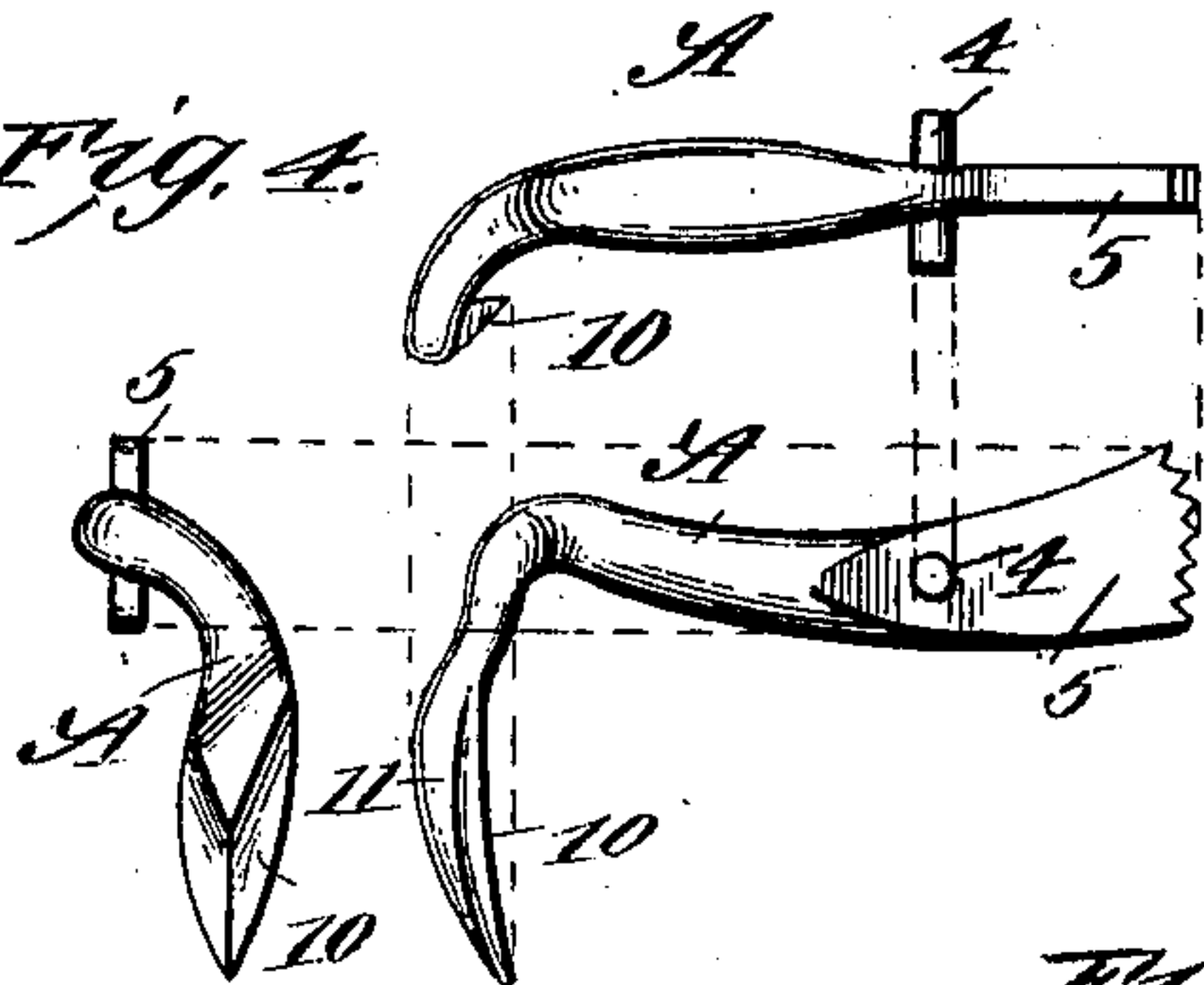


Fig. 5.

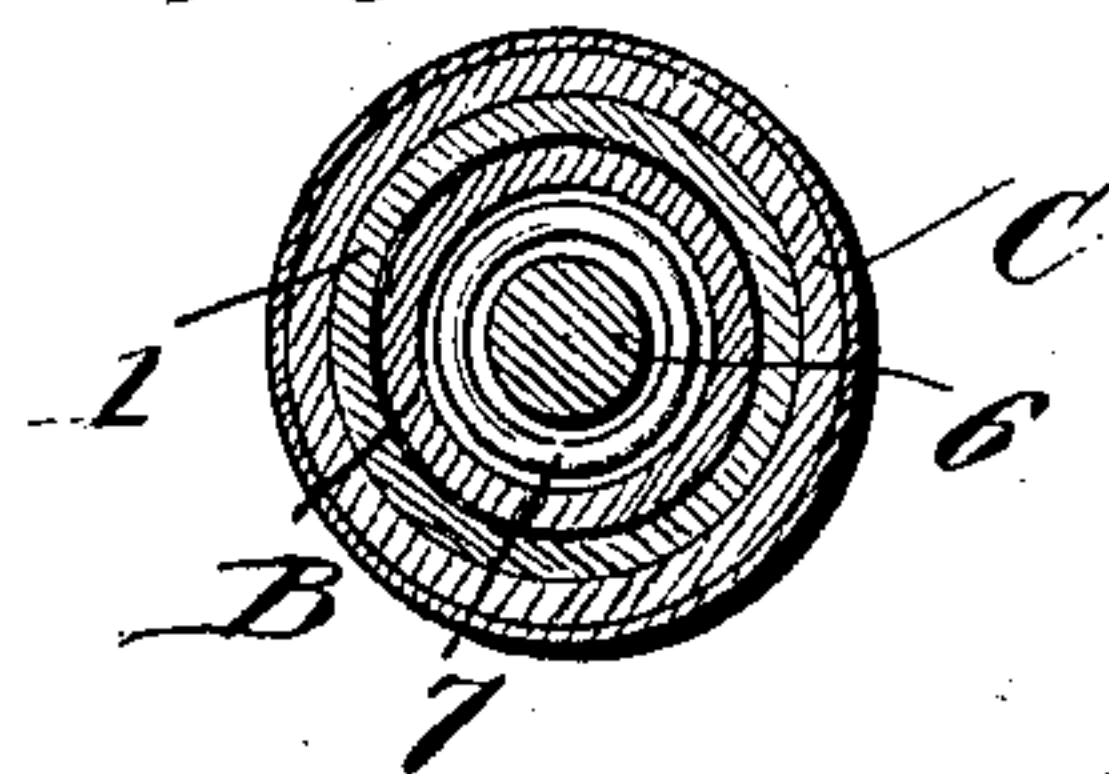
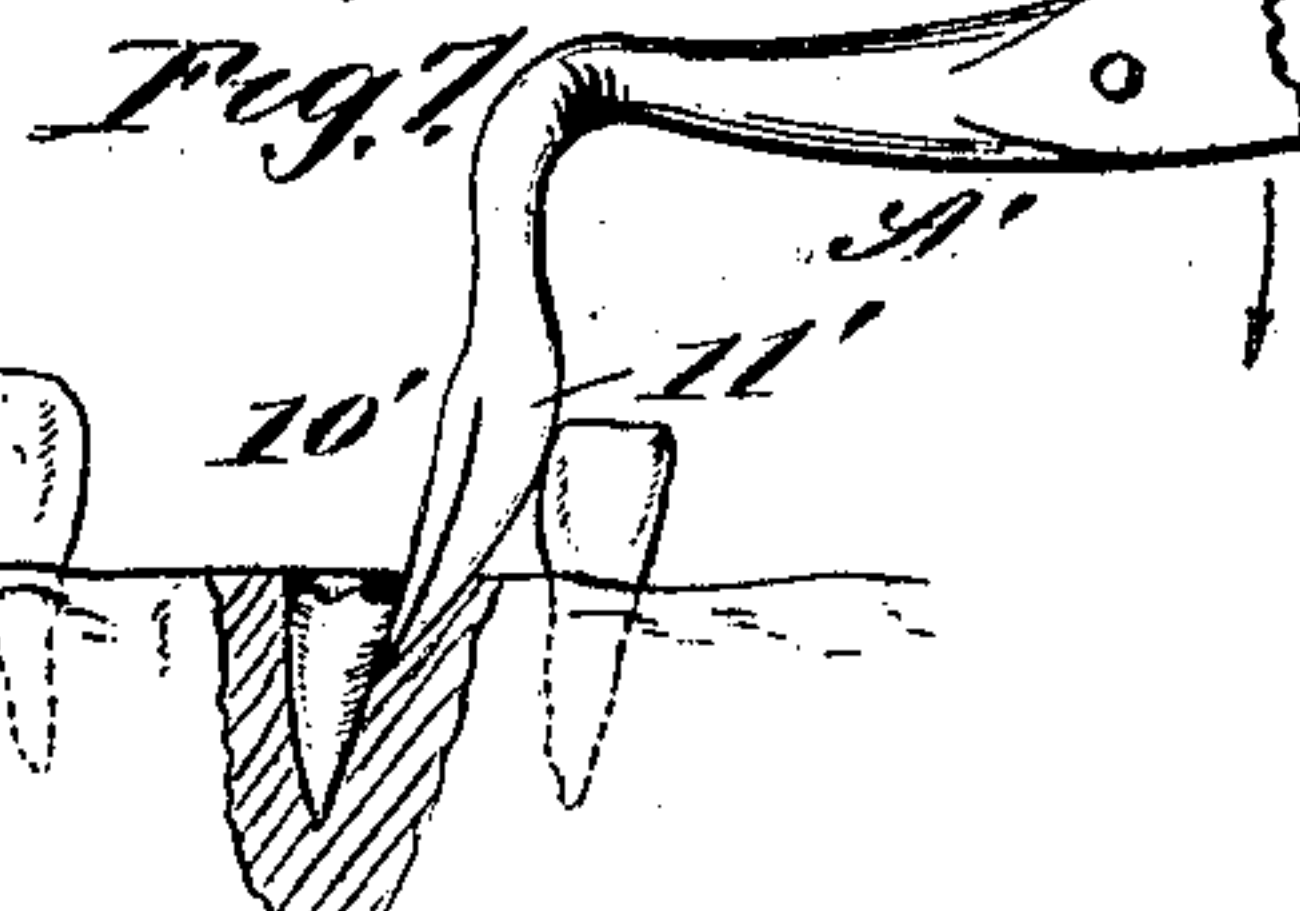
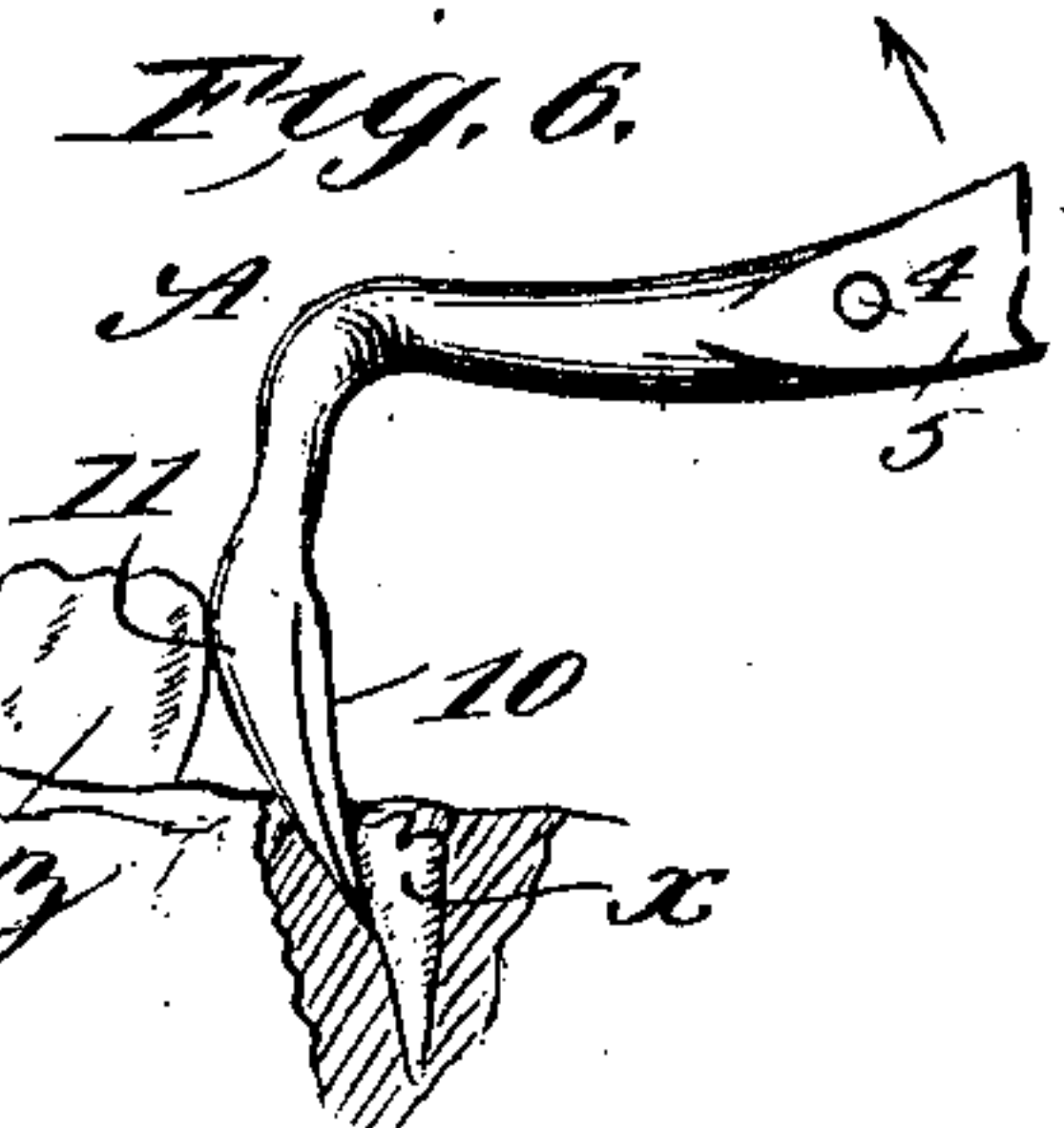


Fig. 6.



WITNESSES:

Fred. D. Bingham  
Amos W. Hart

INVENTOR

Lyster H. Crawford

BY Munn & Co.

ATTORNEYS



# UNITED STATES PATENT OFFICE.

LYTER H. CRAWFORD, OF PHILADELPHIA, PENNSYLVANIA.

## DENTAL INSTRUMENT.

No. 827,507.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed November 18, 1903. Renewed January 6, 1906. Serial No. 294,919.

*To all whom it may concern:*

Be it known that I, LYTER H. CRAWFORD, a citizen of the United States, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have made certain new and useful Improvements in Surgical Instruments, of which the following is a specification.

The object of my invention is to provide for the dental profession an improved substitute for the forceps for use in elevating and extracting roots of teeth. The construction and manner of using the same are as hereinafter described and illustrated in accompanying drawings, in which—

Figure 1 is a side view of my improved instrument. Fig. 2 is a plan view of the same. Fig. 3 is a longitudinal section of the handle and handle-section attached thereto. Fig. 4 includes a plan end and side view of the elevator proper. Fig. 5 is an enlarged cross-section on the line 5 5 of Fig. 3. Figs. 6 and 7 are perspective views illustrating the practical use of the invention.

Referring in the first instance to the instrument as shown in Figs. 1 to 6, A indicates the elevator proper, B the handle-section to which it is attached, and C the handle proper. The handle C is recessed or bored at one end to receive a bushing or sleeve 1, which is threaded interiorly to receive the correspondingly-threaded portion of the handle-section B. The outer end of the handle-section B is provided with a longitudinal slot 2 (see Fig. 2) and with hooks 3, which are adapted to engage trunnions or pivots 4, formed on the flat shank of the elevator A. The inner or rear end 5 of said shank is formed upon the arc of a circle and serrated, as shown in Figs. 3 and 4. The handle-section B is provided with a longitudinal bore, in which slides a rod 6, whose outer end is serrated corresponding to the shank of the elevator with which it is adapted to engage as shown. The rear portion of the bore in the handle-section B is enlarged sufficiently to receive a spiral spring 7, which encircles the locking rod or bolt 6 and is compressed between the head 8 of the latter and the shoulder 9 of the enlarged bore. The head 8 of the bolt 6 works in contact with the inner end of the bore in the handle C or with a hardened piece of metal inserted therein. The handle-section B being screwed into the threaded bushing 1, it is apparent that by

rotating it the bolt 6 may be forced out, so as to engage and lock the elevator A, as shown in Figs. 1, 2, or pressure on the bolt may be released, when the spring 7 will draw the bolt out of engagement with the elevator, thus allowing the latter to be set and locked at any desired angle to the handle and handle-section which conditions may require. It is also apparent that by releasing the tension on the spring 7 the elevator A may be readily removed from the hooks 3 and another one substituted, according to the requirements of the case.

The elevator is peculiarly constructed—that is to say, in its main form or chief characteristic of shape, which is right angular—the beak or working end 10 being curved and tapered and slightly concave on one side and prominently convex on the other. The elevator is further distinguished by a lateral curve, so that the beak 10 is set laterally or at an angle to the axis of the shank, as illustrated in Figs. 2 and 4. It will be understood that this lateral deflection will be to the right or left, according as a particular elevator has to be used on one side of the mouth or the other. In practical use of the instrument the point of the beak 10 is forced down between the tooth-root  $x$  which is to be extracted and the alveolar process, as crudely illustrated in Fig. 6, the convexity 11 of the beak bearing against an adjacent tooth—say a molar  $y$ —and constituting a point of leverage for the instrument as a whole. Then upon bearing upward a sufficient leverage is applied to the point of the beak 10 to loosen and disengage the tooth-root  $x$ , as will be readily understood.

It will be understood that the convexity 11 of the beak of the elevator will be anterior or posterior, as illustrated, respectively, by Figs. 6 and 7, according to conditions—that is to say, according to the location of the tooth-root which is to be extracted. Thus in Fig. 7 the beak 10' is provided with a convexity 11' on the rear side, so that it is adapted to act against a root adjacent or near to a sound tooth located in front of it. Thus a series of elevators will be provided for each handle to form a complete instrument. It is unnecessary to describe further the details of construction and operation, since these will be readily understood by those skilled in the art. It is apparent that the instrument affords an



efficient substitute for the ordinary forceps and may be successfully applied in cases in which the former is not applicable.

What I claim is—

5 1. The improved surgical instrument for dental use, comprising a handle having a shank, and a beak which is formed thereon substantially at a right angle, and tapered to a point and made convex on the side farthest  
10 from the shank, substantially as described.

2. The improved surgical instrument for dental use, comprising a shank which is bent laterally, and then downward, and a beak forming the terminal of the downward bend,  
15 and tapered as specified.

3. The improved surgical instrument for dental use, comprising a handle and a tooth-root elevator having a beak arranged substantially at a right angle to the shank, which  
20 is also curved laterally, the beak being tapered to a point and made concavo-convex, the convexity being on the side which is farthest from the shank and the inner side being arranged practically at a right angle to the  
25 straight portion of the shank, whereby the beak is adapted for insertion and leverage in the manner described.

4. The combination, with a handle and a handle-section adapted for adjustment longitudinally with reference to the latter, of the  
30 pivoted tooth-elevator, and means for locking the same at different angles, which consist of a sliding bolt whose head works in contact with the end of the bore in the handle, and a spiral spring surrounding the bolt  
35 and exerting pressure upon the same outwardly, substantially as described.

5. The combination, with the handle and handle-section connected by a screw-threaded joint and adapted for adjustment relative to  
40 each other, of the pivoted tooth-elevator proper and a locking-bolt adapted to engage the elevator, and a spiral spring encircling the bolt and applying pressure in opposition to the handle, substantially as described. 45

6. The combination, with the handle-section having a slot and hooks at its outer end, of the tooth-elevator proper having trunnions adapted to engage the hooks detachably, and means for locking the elevator in  
50 rigid engagement with the hooks, substantially as described.

7. The combination, with the handle having an engaging device at its free end, of the tooth-elevator proper which is pivotally connected with said device and detachable therefrom, the shank of the elevator being constructed at its inner end upon the arc of a circle and serrated, and a locking device arranged in the handle and adapted to engage  
60 the serrations of the elevator-shank, substantially as described.

8. The combination, with the handle having an engaging device at its outer end, of the tooth-elevator which is pivotally and detachably connected with said device, and means  
65 for locking the elevator at any required angle and permitting the detachment of the same, substantially as described.

LYTER H. CRAWFORD.

Witnesses:

ANNA GEAR,

WM. LANIER GAULBERT.