

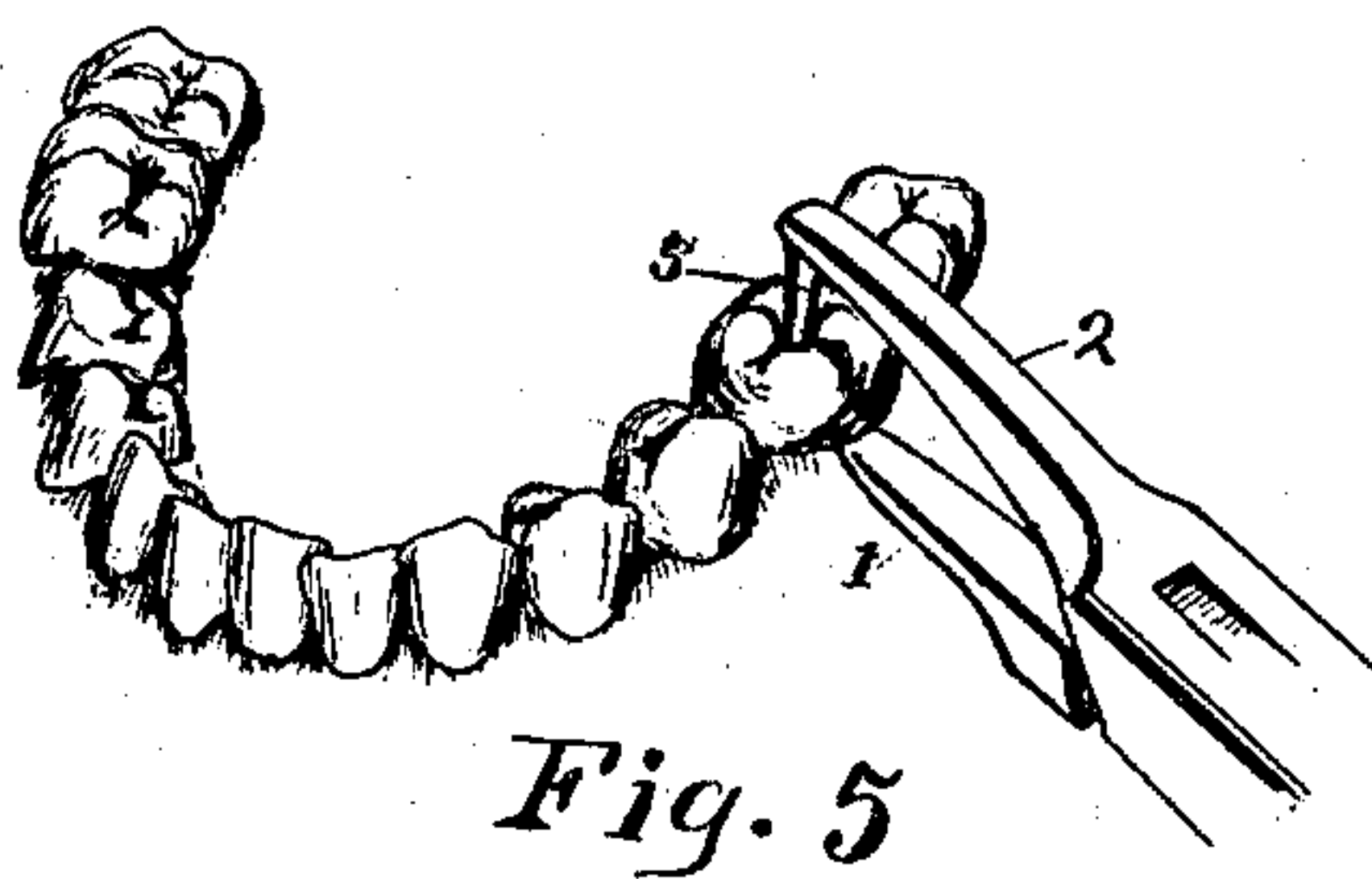
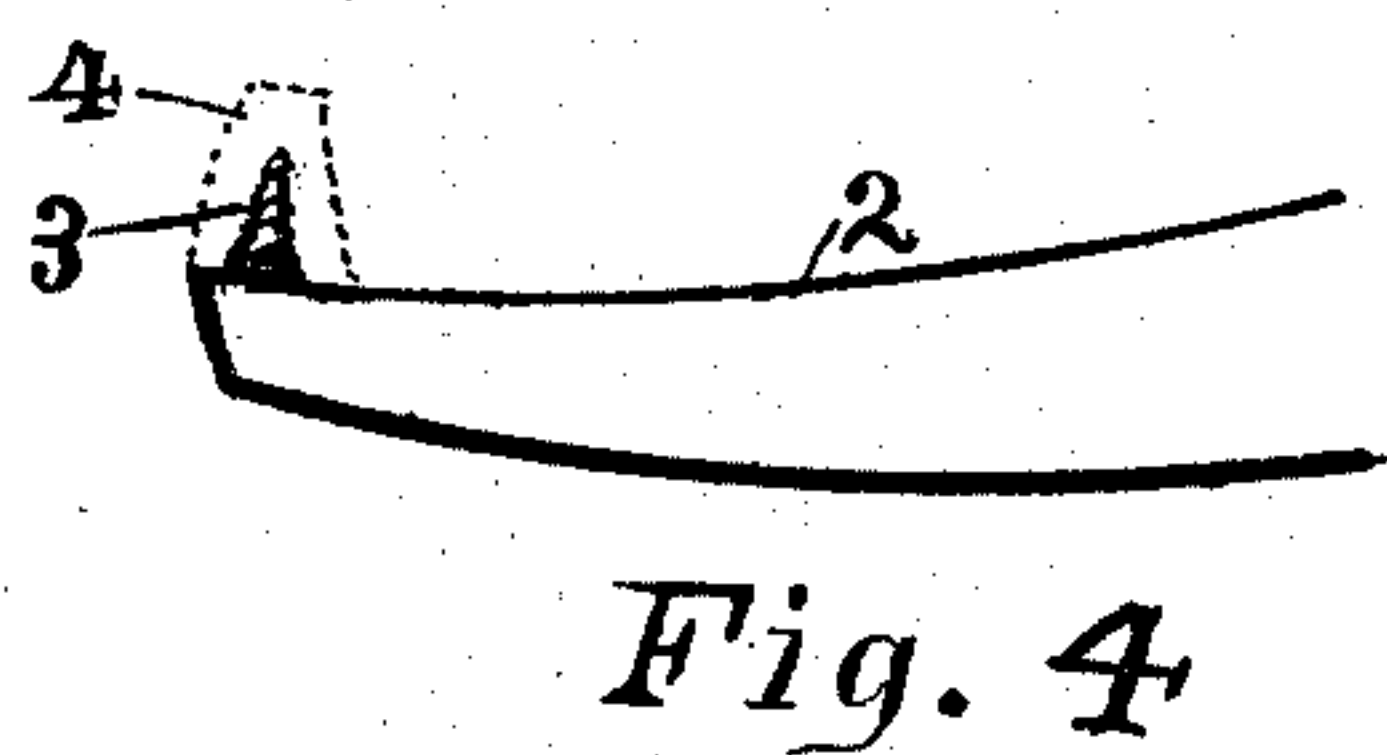
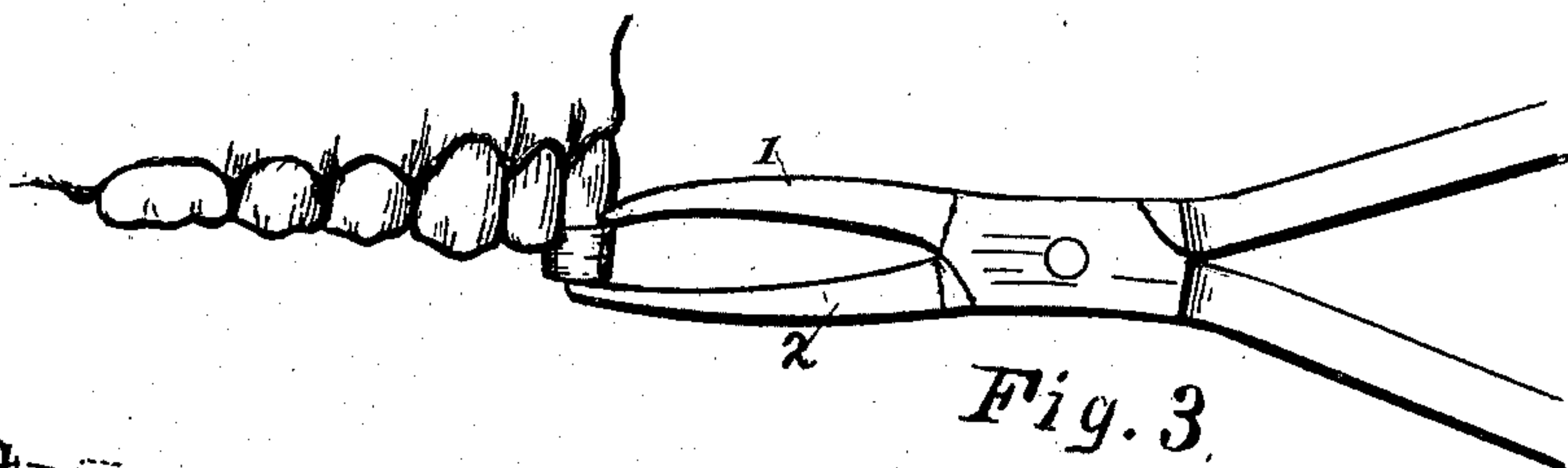
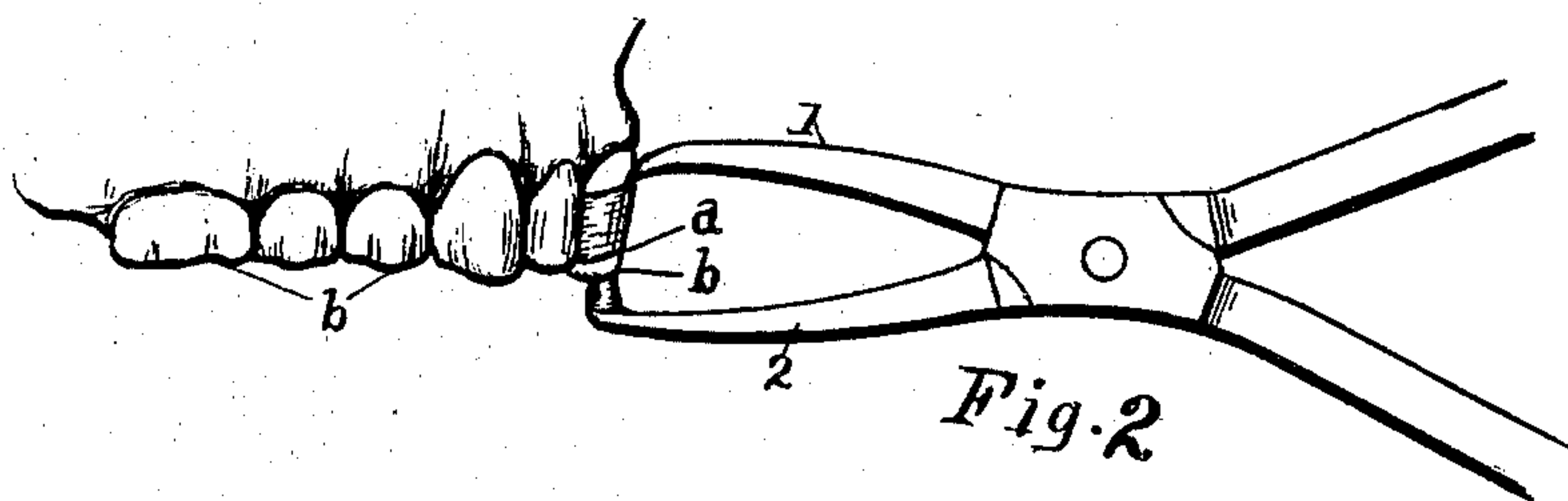
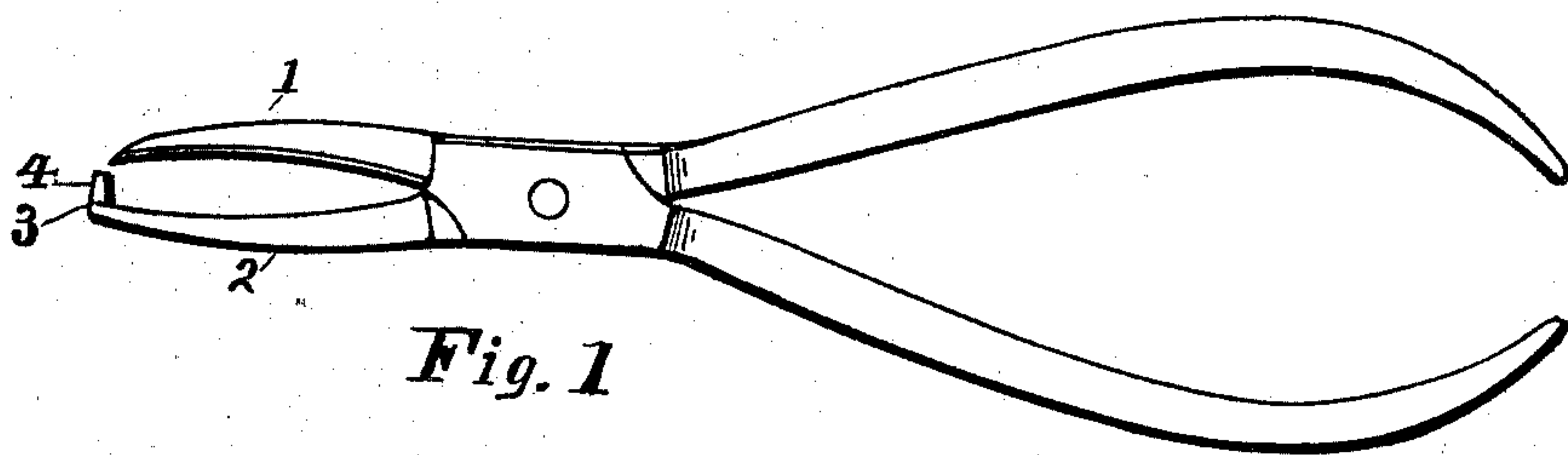
No. 731,337.

PATENTED JUNE 16, 1903.

C. S. CASE.
DENTAL PLIERS.

APPLICATION FILED APR. 7, 1902.

NO MODEL.



WITNESSES: *Carl B. Case.*
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INVENTOR.

UNITED STATES PATENT OFFICE.

CALVIN S. CASE, OF CHICAGO, ILLINOIS.

DENTAL PLIERS.

SPECIFICATION forming part of Letters Patent No. 731,337, dated June 16, 1903.

Application filed April 7, 1902. Serial No. 101,809. (No model.)

To all whom it may concern:

Be it known that I, CALVIN S. CASE, a citizen of the United States, residing at Chicago, in the State of Illinois, have invented new and useful Improvements in Dental Pliers for the Removal of Bands and Crown-Dentures from the Teeth; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention has for its object to provide pliers which can be used safely and with practical advantage about the mouth for any purpose when it becomes necessary or desirable to rest one jaw of the pliers upon the cutting edges or occlusal surfaces of the teeth as a means of leverage to the force of action.

Pliers constructed according to my invention are designed especially for removing dental regulating-bands, ferrules, crowns, or bridge-dentures that have been fitted and attached to the teeth.

The principal object of the invention is to enable the operator to exert a leverage force upon the object to be removed by engaging it with one jaw of the pliers while the other or fulcrum jaw rests upon the tooth or root to which the object is attached, thus producing a minimum degree of strain upon the tooth and pain to the patient because of the counteracting effect of the two forces in opposite directions.

The operation of removing bands and crowns that have been attached to the teeth with cement often requires considerable force. If a free-hand lever or cutter is used for this purpose, the strain of the required force to detach the object is exerted in one direction and always toward extracting the tooth from its socket, causing pain and possibly injury to its root attachments, the tooth being more or less loosened and its surrounding membranes inflamed by existing conditions. On the other hand, if a flat-nosed pair of pliers is used with the fulcrum-jaw resting upon the occlusal surface on incisal edges of the enamel, while the other jaw engages with the band for its removal, the force of the hard steel fulcrum-jaw upon the tooth will endanger the integrity of the enamel and frequently produce a permanent defacement of the tooth. This is especially true of front teeth, whose incisal enamel edges are often frail and brittle.

Again, in those instances where the occlusal edges of the bands (*a*, Fig. 2) are even with or near the occlusal planes (*b b*, Fig. 2) of the teeth, as is nearly always the case, the flat fulcrum-jaw of the pliers, resting upon the tooth, will cease to act as a stationary fulcrum-rest as soon as the band is brought in contact with it, making it necessary at this stage to grasp the band with both jaws of the pliers and pull it off bodily, with the production of the same character of strain upon the sensitive tissues as occurs with a free-hand instrument.

The drawings which accompany and form a part of this specification fully illustrate the invention hereinafter described.

Figure 1 gives a view of the dental pliers for removing regulating-bands, in which is shown: lifting or cutting jaw 1, fulcrum-jaw 2, right-angle extension 3 of fulcrum-jaw, which is armed with a cushion-rest attachment 4. Fig. 2 shows the same pliers in position for detaching a band from an incisor tooth. Fig. 3 illustrates the position of the parts after the band has been forced down and partially off the tooth, the cushion attachment 4 having disappeared within the band. Fig. 4 shows enlarged view of the fulcrum-jaw 2 with its right-angle extension 3 in the form of a screw for the attachment of detachable fulcrum-rests, which may be made in a variety of forms and of different material to suit various demands, as shown in Figs. 2 and 5. Fig. 5 shows pliers in position for the removal of a gold crown. The fulcrum-rest 5 may be an extra attachment, as shown in Fig. 4, or it may be formed by bending the end of the fulcrum-jaw itself. In position it is thrust through a hole bored in the crown and in this way obtains direct bearing upon the tooth or root, while the crown is lifted from its attachments with the other jaw of the pliers.

It will be seen by the drawings that my invention is intended to obviate the aforesaid difficulties common to other methods of removing bands or crowns from the teeth: first, by constructing pliers with the fulcrum-jaw 2 longer than the lifting-jaw 1 and upon the biting-surface at the terminal end of the fulcrum-jaw erecting a right-angled extension 3 4 5, shaped to enter the band or crown

and retain its fulcrum-rest upon the tooth without interference with the said band or crown during the process of its complete detachment; second, as a part of the invention
 5 and especially designed for the removal or cutting of regulating-bands the right-angled extension of the fulcrum-jaw 2 may be composed wholly or in part of copper, vulcanite, or other material to form a cushion-rest that
 10 will not injure the enamel.

I do not wish my invention to be construed as confined to the necessity of bending the fulcrum-jaw of the pliers itself to the right-angled extension, as described, as it may be
 15 found by the manufacturer more convenient to form this part of the pliers by attaching to the extreme end of the fulcrum-jaw, by riveting or otherwise, an extra piece of steel, which in turn can be shaped to carry and
 20 support the permanently-attached or detachable fulcrum-rests referred to, or the material of which the fulcrum-rest is composed may be attached directly, by brazing or otherwise, to the biting-surface of the jaw at its
 25 terminal end.

It will be seen that in all the methods of construction herein described the principles involved are the same, viz: dental pliers with one jaw extending beyond the other and the
 30 terminal end of the longer jaw, *per se*, or in combination with its attachments turned at right angles toward its biting-surface and shaped to enter a dental band, ferrule, or crown to secure and retain its fulcrum-rest
 35 upon the tooth during the process of lifting the said object from its attachment.

I make no claim relative to the lifting-jaw 1 of the pliers, it being shaped in the most convenient form for engaging with or for cutting bands or crowns.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. A pair of dental pliers, having one jaw longer than the other, and the terminal end
 45 of the longer or fulcrum jaw, 2, turned toward and at right angles to the plane of its biting-surface, and adapted to enter a band or crown substantially as and for the purposes set forth.

2. A pair of dental pliers with one jaw longer than the other, and at the terminal end of the longer or fulcrum jaw, 2, and projecting at right angles to its biting-surface a pivot, cone or screw adapted for the attachment of
 55 a shoe or cushion of copper, vulcanite, or other material, substantially as and for the purposes described.

3. A pair of dental pliers having one of its jaws longer than the other, and attached by
 60 any means to the terminal end of the longer jaw, and projecting at right angles toward the biting plane, an extra biting or fulcrum attachment composed of any material softer than the steel of the pliers.

It testimony whereof I affix my signature in the presence of two witnesses.

CALVIN S. CASE.

Witnesses:

CARL B. CASE,
 SAMUEL W. FAHRNEY.