No. 713,453. Patented Nov. 11, 1902.

J. D. KINSLEY.

TOOTH CROWN BURNISHER.

(Application filed June 3, 1902.)

(No Model.) 2 Sheets—Sheet 1.

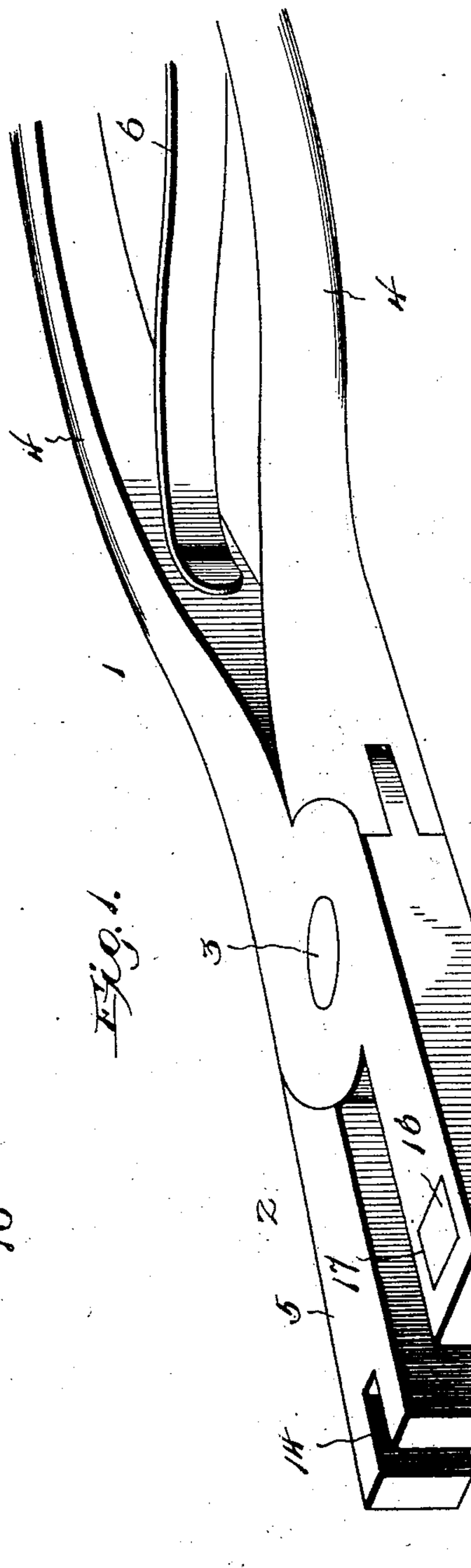

Fig. 1.

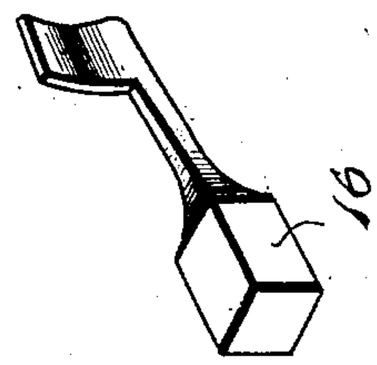

Fig. 7.

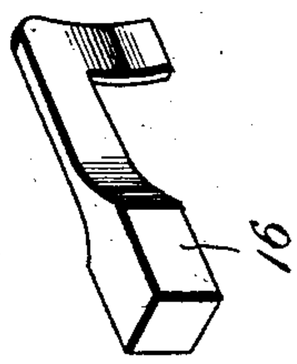

Fig. 8.

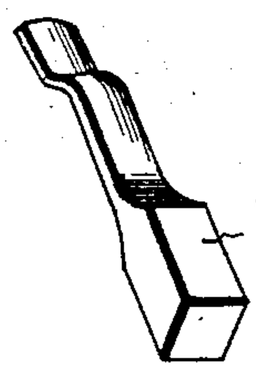

Fig. 6.

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(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

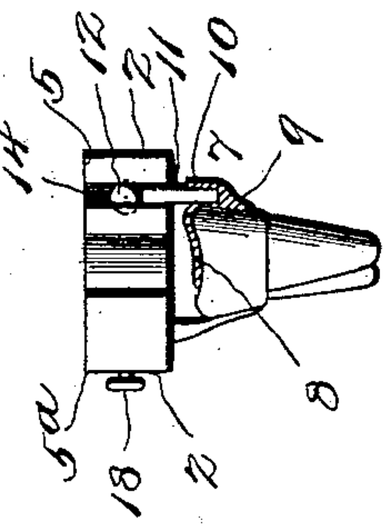


Fig. 4.

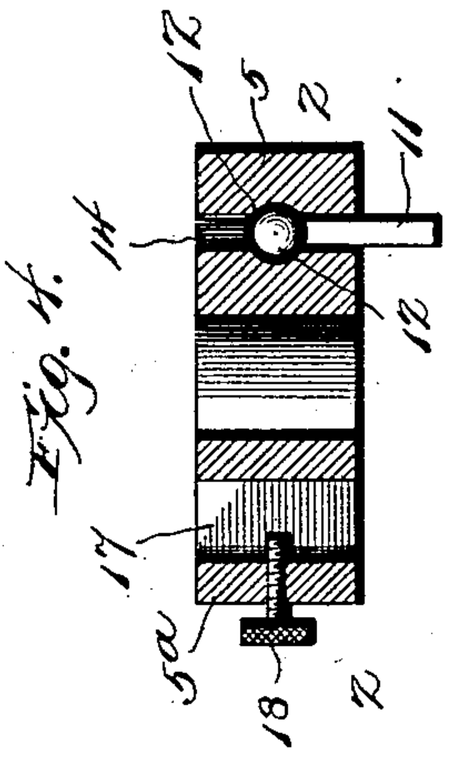


Fig. 5.

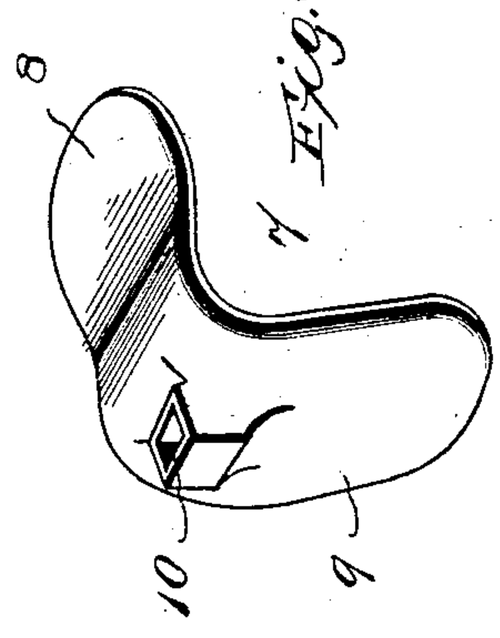
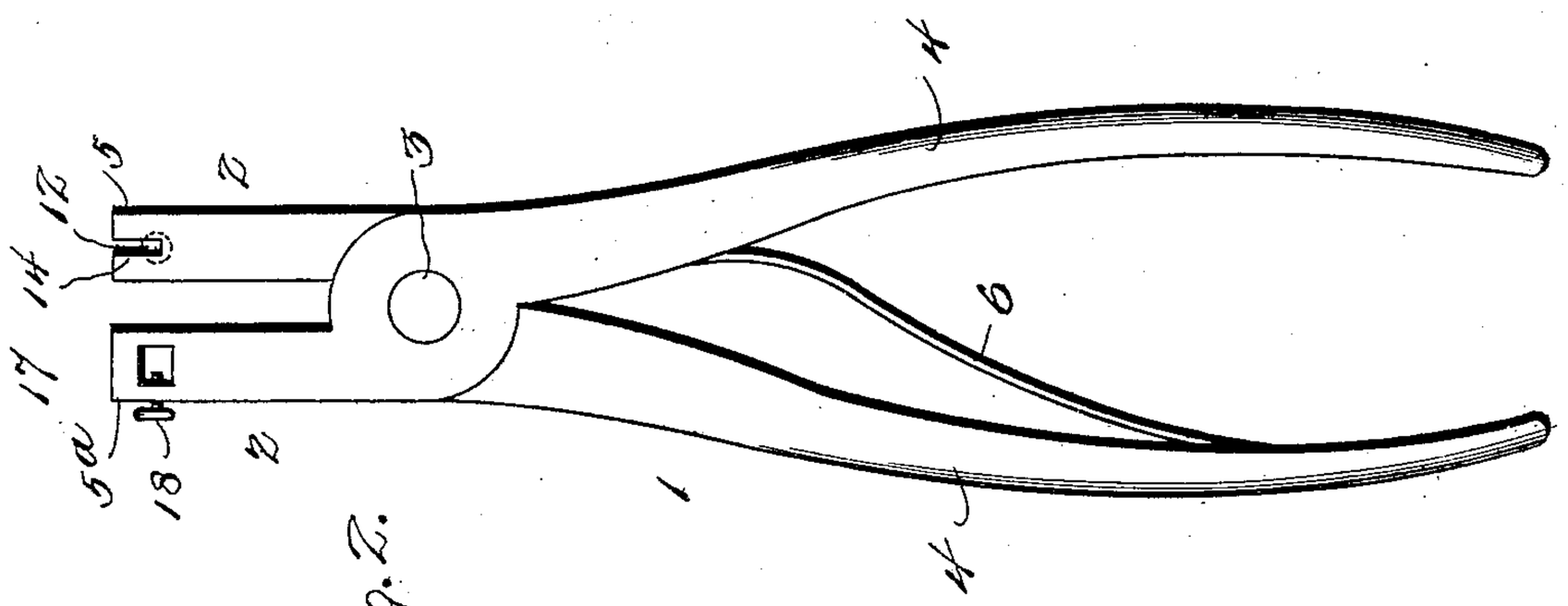


Fig. 2.



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UNITED STATES PATENT OFFICE.

JASON D. KINSLEY, OF LISBON, IOWA.

TOOTH-CROWN BURNISHER.

SPECIFICATION forming part of Letters Patent No. 713,453, dated November 11, 1902.

Application filed June 3, 1902. Serial No. 110,012. (No model.)

To all whom it may concern:

Be it known that I, JASON D. KINSLEY, a citizen of the United States, residing at Lisbon, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Tooth-Crown Burnishers, of which the following is a specification.

This invention relates to an improved tooth-crown burnisher comprising means for firmly holding the crown in proper position upon the tooth and at the same time while the cement is still soft permitting the operator to burnish the margins very tightly on all sides and in such burnishing operation maintaining an equal pressure upon opposite sides of the crown, thus insuring the close adaptation of the crown to the neck of the tooth.

Inasmuch as the crown of the natural tooth is larger than the neck, it is well known in the profession that the success of a gold crown depends very largely upon its close adaptation to the neck. Hence it is very essential that the cervical margin be tightly burnished down after cementing the crown in position before the cement hardens, even though considerable care has been taken in dressing down the sides of a tooth.

The object of the present invention, therefore, is to overcome certain difficulties in the way of polishing crowns, and to accomplish this result the same provides an appliance which permits of the crown being handled with facility and properly burnished under necessary pressure.

With these and many other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts, as will be hereinafter more fully described, illustrated, and claimed.

The essential feature of the invention involved in the employment of a tool-holder carrying a fulcrum member arranged for support upon the tooth-crown and a burnishing element arranged in opposition to said fulcrum member for the purposes indicated is necessarily susceptible to a wide range of modification without departing from the spirit of the invention; but a preferred embodiment of the latter is shown in the drawings, in which—

Figure 1 is a perspective view of a tooth-crown burnisher shown in its operative applied position for burnishing a gold crown applied to the crown of the natural tooth. Fig. 2 is an elevation of the tool-holder or tool-carrying pliers, showing the means for connecting thereto the fulcrum member and the burnishing element. Fig. 3 is a detail end view of the tool-holder or tool-carrying pliers, showing the fulcrum member and burnishing element carried thereby and engaging the crown to be burnished upon the tooth. Fig. 4 is a sectional view of the tool-carrying portion of the holder or pliers, showing the means for connection therewith of the fulcrum member and the burnishing element. Fig. 5 is a detail in perspective of a preferred form of the fulcrum member in the form of a cap and constituting not only a fulcrum-point upon which the tool-holder is swung, but also a holder or retainer for maintaining the crown firmly in position during the operation of burnishing. Figs. 6, 7, and 8 are details in perspective of different forms of burnishing elements, Fig. 6 showing a burnisher-point designed for use upon the buccal or lingual portions of the cervical margin of the gold crown, Fig. 7 showing a burnisher-point designed for use upon the mesial portion of the cervical margin of a gold crown, and Fig. 8 showing a burnisher-point designed for use upon the distal portion of the cervical margin of a gold crown.

Like reference-numerals designate corresponding parts throughout the several figures of the drawings.

In carrying out the invention the tools proper, which have been termed the "fulcrum member" and "burnishing elements," are designed to be carried by a suitable form of tool-holder. A preferable type of holder or carrier is shown in the drawings and designated in its entirety by the numeral 1. This tool holder or carrier in the construction shown in the drawings is essentially in the form of an ordinary pair of pliers consisting of the separate lever members 2, arranged in crossing relation and pivotally united contiguous to one end by the pivot 3. At one side of the pivot 3 the lever members 2 are extended to form the handles 4 and at the other side of the pivot the said levers are extended into the opposing pressure-jaws 5 and

5ª, arranged to move toward and away from each other and designed to carry the tools which engage with the gold tooth-crown. In connection with the tool-carrying pliers 1 there is preferably associated an opening-spring 6, interposed between the handles 4 and normally serving to open the jaws 5 and 5ª when the handles are relieved from the pressure of the hand.

An important feature of the present invention resides in associating with the tool-holder an element which not only serves as a stationary retainer or holder for the gold crown, but also constitutes a pivot-point upon which the tool turns to permit of the burnishing element being worked over the cervical margin of the crown being burnished. This part of the invention is carried out by the employment of a fulcrum member 7. The fulcrum member 7 is preferably in the form of a half-cap, essentially consisting of a top bearing-plate 8, shaped to fit the top portion of the gold crown, and a side clamp-flange 9, angularly related to the top bearing-plate 8 and shaped to fit a side portion of the crown. The said fulcrum cap or member 7 is therefore of an approximate L form in longitudinal section, inasmuch as the same is adapted to fit over or embrace an edge of the gold crown. It will of course be understood that while the approximate L form of the fulcrum-cap 7 is necessarily preserved the configuration thereof varies to correspond with the forms of bicuspids and incisors, and hence fulcrum-caps for these different tooths will necessarily be supplied with the instrument.

The fulcrum-cap 7 is provided at or contiguous to the juncture between the separate portions thereof with an attaching-socket 10, adapted to detachably receive one end of a pivot-stud 11, the other end of which has a universal-joint connection with one of the pressure-jaws 5, which jaw is designated by the numeral 5 in the drawings. This universal-joint connection between the pivot-stud 11 and one of the pressure-jaws may be provided in different ways, but preferably through the medium of a ball-and-socket joint, the stud 11 being provided with the joint-ball 12, fitting the globular socket 13, formed in the outer end of the jaw 5 and intersected by a transverse slot 14, extending across the entire width of the end of the jaw 5, whereby the stud or shank 12 may rest in the slot at either side of the socket 13, according to the position of the tool-holder or pliers 1.

The pressure-jaw 5ª, working in opposition to the jaw 5, is designed to carry the burnishing elements. Each burnishing element is in the form of a burnishing-point 15, having an attaching-shank 16, adapted to be detachably held to the pressure-jaw 5ª by a suitable clamp. A preferable form of clamp is shown in the drawings and consists in providing the jaw 5ª with a tool-socket 17 and a fastening-screw 18, arranged at one side of the socket and adapted to impinge against the attaching-shank 16 of the burnishing-point. The active portions of the burnishing-points necessarily vary in configuration according to the configuration of the portion of the margin to be burnished. In Fig. 6 there is shown a form of point designed for use upon the buccal or lingual portions of the cervical margin of the gold crown, and in Fig. 7 is shown a point formed for use upon the mesial portion of the cervical margin, and in Fig. 8 is shown a point designed for use upon the distal portion of the cervical margin of the gold crown.

The purpose of the several burnisher-points is when under pressure to bring the cervical margin of the gold crown tightly in contact with the cervical margin of the natural tooth and also while under such pressure by swinging or oscillating the tool-holder or instrument upon its pivot-axis 11 to burnish the entire one-quarter of the cervical margin backward and forward and upward and downward at the will of the operator without dislodging the crown in the slightest degree. After burnishing the lingual margin the burnishing point or element is removed from its clamp and introduced into the socket 17 from the opposite side, whereby the instrument may be entirely reversed, so that the same conditions may be brought to bear upon the buccal margin as were exercised upon the lingual margin before reversing. In this reversing of the instrument it is obvious that the transverse slot 14 permits the fulcrum-cap to be readily swung around to the opposite side without disconnecting the parts.

In the burnishing operation it is obvious that the fulcrum-cap 7 not only constitutes a pivotal support for the instrument, but also permits of pressure being brought to bear upon the surfaces which it covers, and also constitutes a holder for firmly retaining the crown in position during the operation of burnishing.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described tool will be readily apparent to those familiar with the art without further description, and it will also be understood that various changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit of the invention or sacrificing any of the advantages thereof.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a tooth-crown burnisher, the combination of a tool-holder, and separate crown holding and burnishing elements carried by the said holder.

2. In a tooth-crown burnisher, a tool-holder, and separate crown holding and burnishing elements carried by the said holder and arranged in opposite relation.

3. In a tooth-crown burnisher, a tool-holder having separate pressure-jaws, and crown

holding and burnishing elements carried respectively by the separate jaws of the holder.

4. In a tooth-crown burnisher, a tool-holder having pressure-jaws, a crown-holding half-cap carried by one of the jaws and fitting the top and a side portion of the tooth-crown, and a burnishing element carried by the other jaw.

5. In a tooth-crown burnisher, a tool-holder having pressure-jaws, a fulcrum member having pivotal connection with one of said jaws and adapted to engage the crown to constitute a fixed holder therefor, and a burnishing element carried by the other jaw.

6. In a tooth-crown burnisher, a tool-holder having opposing pressure-jaws, a half-cap constituting a fixed holder for the crown and provided with a pivot-stud having a universal pivotal connection with one of said jaws, and a burnishing element detachably carried by the other jaw.

7. In a tooth-crown burnisher, the tool-holder having opposing pressure-jaws one of which is provided with a slotted end, a fulcrum member in the form of a half-cap fitting a side and top portion of the crown and provided with a pivot-stud having a universal-joint connection with said slotted end of one of the pressure-jaws, and a burnishing element detachably and reversibly carried by the other jaw.

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

JASON D. KINSLEY.

Witnesses:
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EDWIN N. FARBER.