

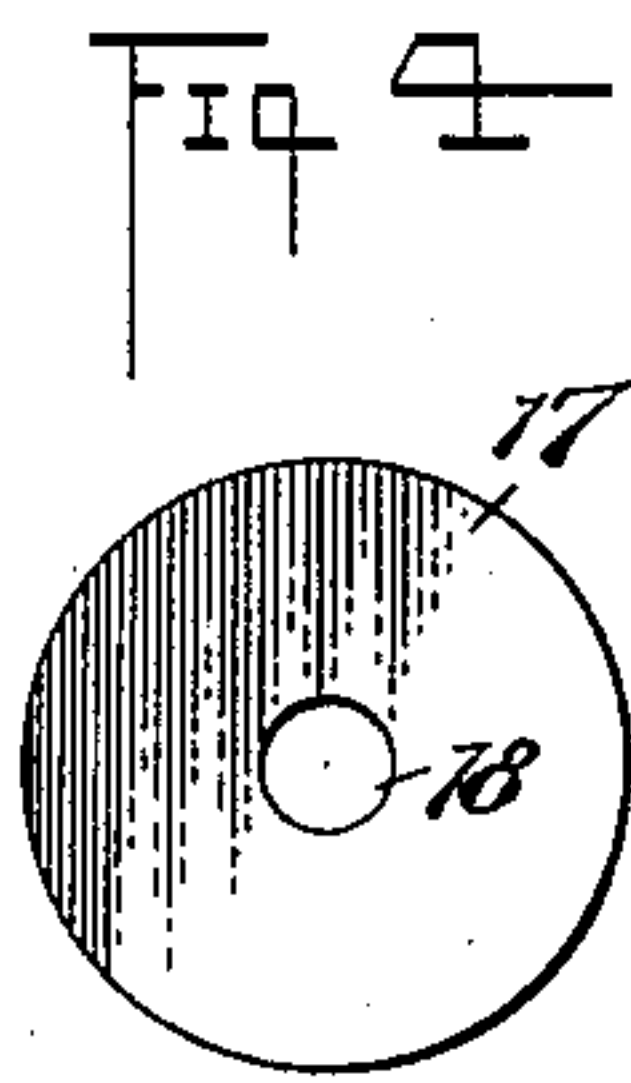
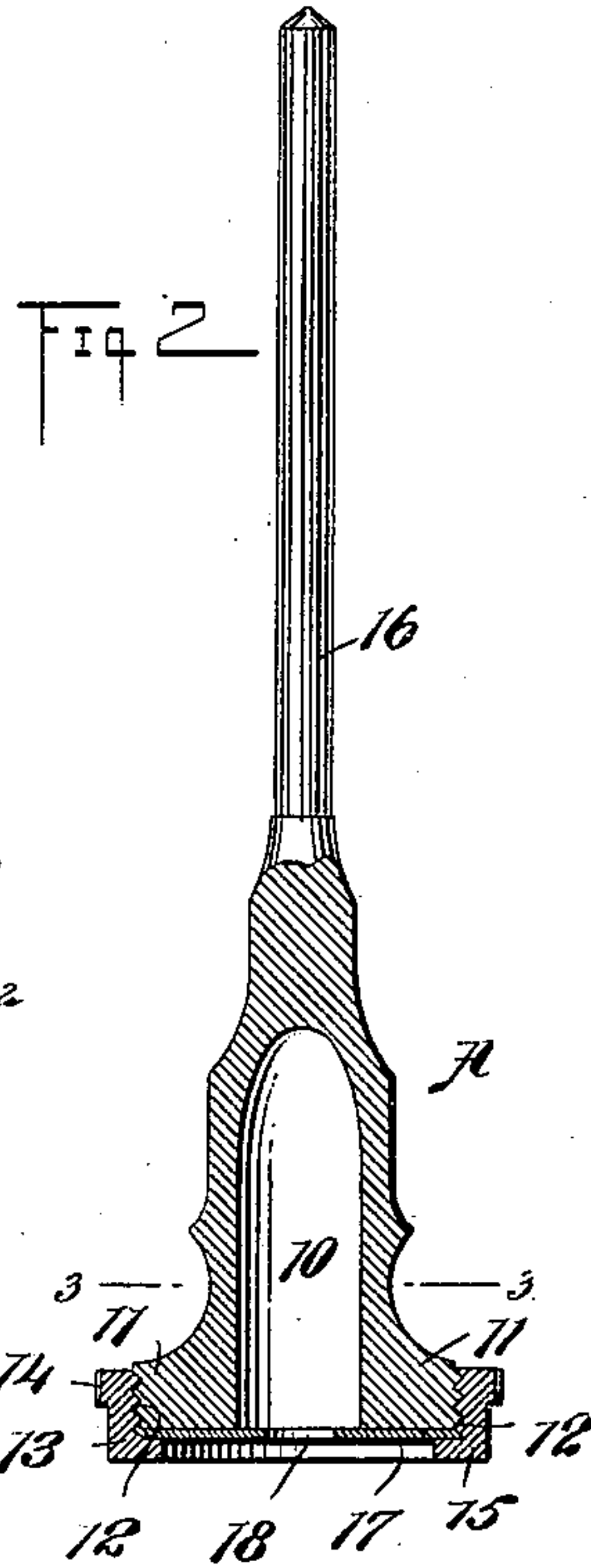
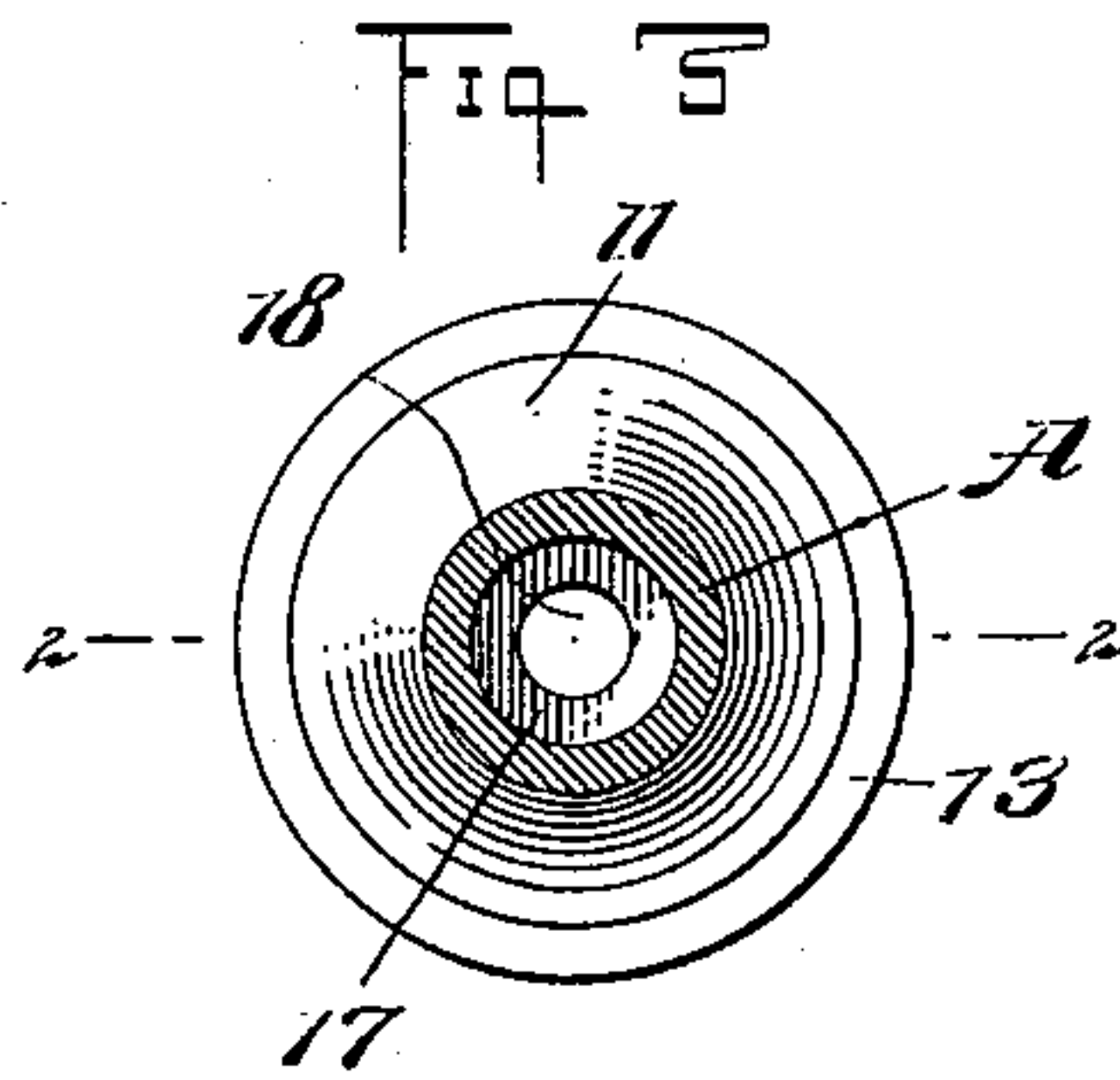
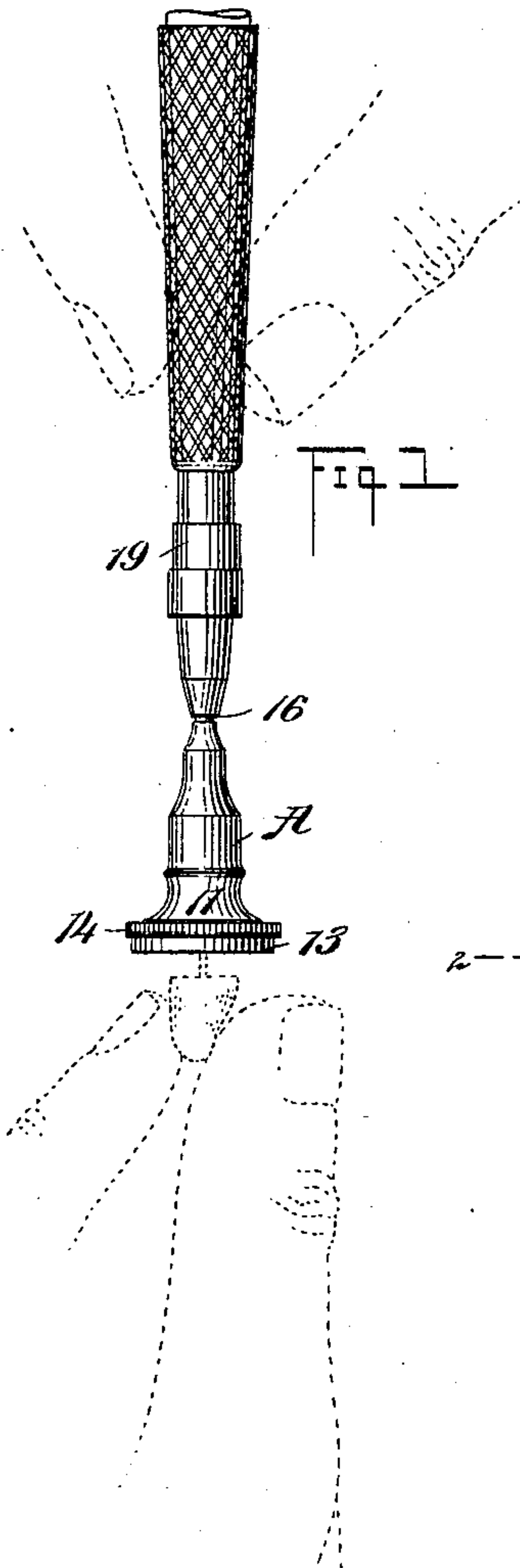
No. 682,077.

Patented Sept. 3, 1901.

C. E. HOFFMAN.
PORCELAIN CROWN FACER.

(Application filed Apr. 9, 1901.)

(No Model.)



WITNESSES:
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UNITED STATES PATENT OFFICE.

CHARLES E. HOFFMAN, OF NEW ALBANY, INDIANA.

PORCELAIN-CROWN FACER.

SPECIFICATION forming part of Letters Patent No. 682,077, dated September 3, 1901.

Application filed April 9, 1901. Serial No. 55,030. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. HOFFMAN, a citizen of the United States, and a resident of New Albany, in the county of Floyd and State of Indiana, have invented a new and Improved Porcelain-Crown Facer, of which the following is a full, clear, and exact description.

The purpose of this invention is to provide a simple, effective, and economic instrument especially adapted for grinding a perfectly flat face upon the cervical portion of what is known to the dental profession as a "Logan crown," enabling a perfect joint to be ground when setting such a crown upon the root of a tooth in the mouth of a patient.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the instrument and also illustrates the manner in which the instrument is operated. Fig. 2 is a longitudinal vertical section through the body portion of the instrument and a side elevation of its shank, the section being taken on the line 2 2 of Fig. 3. Fig. 3 is a horizontal section taken on the line 3 3 of Fig. 2, and Fig. 4 is a plan view of one of the grinding-disks belonging to the instrument.

The instrument consists of a body A, provided with an interior chamber 10, which extends through its bottom, and a flaring base 11, having an exteriorly-threaded marginal flange 12. A cap-sleeve 13 is screwed upon the flaring base, the sleeve being provided at its upper portion with an exterior serrated or roughened surface 14 to facilitate placing the cap-screw in position of the body or removing it therefrom. The cap-sleeve 13 is also provided with an inwardly-extending horizontal flange 15 at its bottom, as is best shown in Fig. 2, and the body A is provided with a stem or shank 16, which extends from the upper portion of the body.

In connection with the body A and the cap-sleeve 13 a disk 17 is employed, which is preferably made of soft brass. This disk

when it is applied rests upon the flange 15 of the cap-sleeve and is held firmly in engagement therewith and in engagement with the flaring portion 11 of the bottom portion of the body by reason of the cap-sleeve being screwed up tightly on the flaring portion of the body as is shown in Fig. 2. This disk 17, which is a grinding-disk, is provided with a central aperture 18; but the aperture 18 in the disk employed is of less diameter than the diameter of the body-chamber 10, especially at its lower portion, so that when the cap-sleeve 13 is screwed upon the body the disk 17 is firmly held between the cap-sleeve and the outer or lower portion of the body A, and emery or a like substance may be placed in the chamber 10, together with a suitable quantity of water. As the instrument is manipulated the moist emery will feed out through the opening 18 and engage with the upper surface of the tooth to be operated upon, as is shown in dotted lines in Fig. 1. The shank or stem 16 of the instrument is adapted to be placed in the clutch 19, attached to a dental engine.

The disk 17 is a grinding-disk, being brought in engagement with a porcelain crown in connection with a grinding material supplied from the body-chamber 10. The Logan crown is a toothed crown made of porcelain and having a platinum pin baked in the porcelain crown, the pin being intended to extend into the pulp-canal of the tooth, and the crown is intended to be cemented to the tooth. In practice it has been found practically impossible to grind a perfectly flat surface at the cervical portion of such a crown or that portion which abuts against the outer end of the root of the tooth by the use of the small stones usually employed for the purpose in connection with dental engines.

It will be understood that this porcelain-crown facer has a flat soft-metal disk held in place by a screw-cap sleeve and that the disk is held firmly in position at the working end of the instrument. It will be further observed that the body of the instrument and the disk are drilled in the center to admit the pin of the Logan crown, the chamber 10 in the body being of greater diameter than the opening 18 in the disk. The object of this

construction is to allow the crown to be cut at a considerable angle other than a right angle.

In operation the shank of the instrument is placed in the handpiece of the dental engine and a small quantity of emery or a like material is introduced into the chamber 10 in the body of the instrument, together with a few drops of water. The pin of the Logan crown or crown of like construction is now inserted into the instrument through the opening 18 in the disk, bringing the cervical portion of the crown against the face of the disk 17 at the desired angle. The dental machine is now started, and with one hand the operator will hold the handpiece of the dental engine, holding the crown in place with the other hand, as is shown in Fig. 1. As the engine turns the instrument the grinding material is fed down between the porcelain and the disk, cutting the porcelain quite rapidly, and if the porcelain is held in proper position the cervical surface will be ground quite flat.

The disk 17 in time will lose its flat face; but it may be reversed and when worn out may be replaced by a new one. It will thus be observed it is possible to present to the porcelain in every case a smooth flat-faced tool with slight cost.

Frequently a gold cap is made to cover the end of a root, and the pin of the Logan crown is then made to pass through the flat bottom of its cap, in which event the instrument is used to cut the cervical portion flat, so that a perfect joint is possible between the cap and the porcelain crown.

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

1. A porcelain-crown facer, comprising a

chambered body, a cap-sleeve removably attached to the body, and a grinding-disk held between the cap-sleeve and body, the grinding-disk being provided with an opening registering with the chamber in the body, as set forth.

2. A crown-facer, comprising a trumpet-shaped head provided with an opening, a flat grinding-disk located upon said trumpet-shaped head and provided with a smaller opening, and a member removably secured to said trumpet-shaped head and provided with an annular flange adapted to clamp said grinding-disk against said trumpet-shaped head.

3. A crown-facer, comprising a revoluble head provided with an opening, a grinding-disk located upon the same and provided with a second opening, and a retaining member secured upon said revoluble head, engaging said grinding-disk, and provided with a third opening, all of said openings registering centrally with each other, said parts together constituting a tool shaped like a shallow cup, the inner wall of which is smooth and the bottom adjacent to said inner wall is rough.

4. A crown-facer, comprising a revoluble cup, provided with an apertured bottom, the inner wall of said cup being smooth and incapable of grinding, and the bottom thereof adjacent to said inner wall being rough, so as to form a grinding-surface.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES E. HOFFMAN.

Witnesses:

J. H. FAWCETT,

G. A. NEWHOUSE, Jr.