

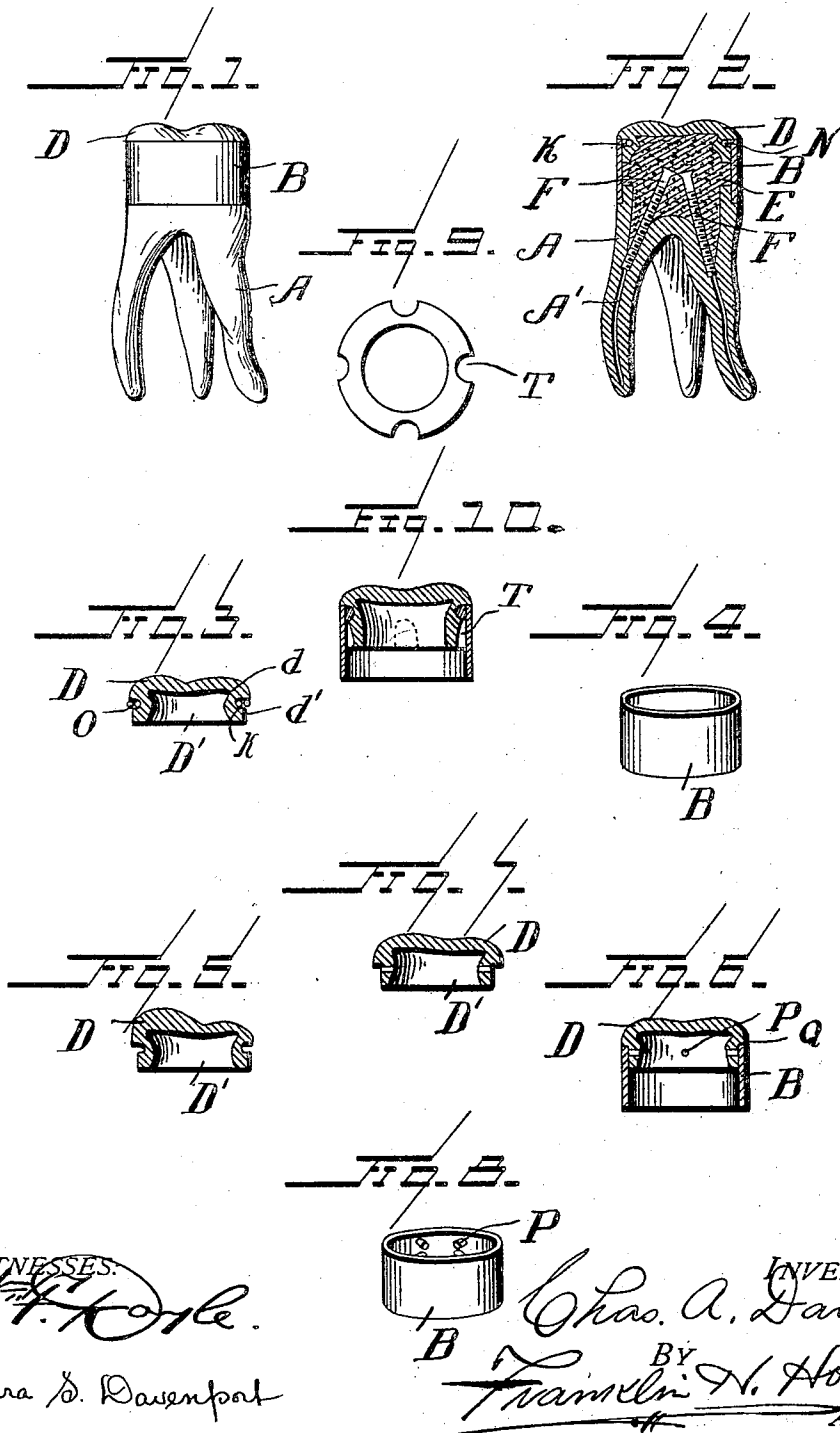
No. 838,849.

PATENTED DEC. 18, 1906.

C. A. DAVIS.

## PORCELAIN AND METALLIC CROWN.

APPLICATION FILED NOV. 11, 1904.



# UNITED STATES PATENT OFFICE.

CHARLES A. DAVIS, OF PASADENA, CALIFORNIA.

## PORCELAIN AND METALLIC CROWN.

No. 838,849.

Specification of Letters Patent.

Patented Dec. 18, 1906.

Application filed November 11, 1904. Serial No. 232,335.

*To all whom it may concern:*

Be it known that I, CHARLES A. DAVIS, a citizen of the United States, residing at Pasadena, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Porcelain and Metallic Crowns; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in porcelain and metallic crowns for teeth, and comprises a means for securely holding a cap or crown to a band and to the root of a tooth; and it consists in various details of construction and combinations of parts which will be hereinafter fully described, and then specifically defined in the appended claims.

My invention is illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this application, and in which—

Figure 1 is a side elevation of a tooth showing a crown secured thereto. Fig. 2 is a longitudinal sectional view through the tooth illustrated in Fig. 1, showing the manner of attachment of the crown or cap to the band and root. Fig. 3 is a detail sectional view through the crown and the metallic ring seated in the circumferential groove therein. Fig. 4 is an enlarged detail view of the band. Fig. 5 is a sectional detail view through a crown, showing the groove without the ring. Fig. 6 is a sectional view through a crown and band having a slightly-modified form of construction. Fig. 7 is a sectional view of the crown with pins inserted in apertures in the circumference thereof preparatory to their being soldered to a band. Fig. 8 is an enlarged detail view showing the manner in which the pins of the modified form in Fig. 6 would be soldered to the inner wall of the band. Fig. 9 is a modified form showing a crown with circumferential grooves or pockets adapted to contain solder, whereby the band may be secured to the cap or crown; and Fig. 10 is a sectional detail view through the modified form of crown shown in Fig. 9 and as applied to the band.

Reference now being had to the details of the drawings by letter, A designates the root

of a tooth, which has nerve-canals A', illustrated in Fig. 2 of the drawings, and B is a metallic band, which is adapted to fit about the circumference of the root at the upper portion thereof and securely bind the same.

D designates a porcelain top or crown, which is chambered, as at D', and has an undercut portion d, as illustrated plainly in Figs. 2 and 3 of the drawings, the undercut portion being provided to allow the cement E, which is placed in the chambered portion of the root, to engage therein for assisting in securely holding the crown and band in place. Screws F are provided, which are embedded in the cement E, and the threaded shank portions of said screws may be inserted in the nerve-cavities of the roots for the purpose of securely holding the cement to the root. The circumference of the crown is cut away, as at d', to receive the band B, and forms a shoulder at its upper end, which rests upon the upper edge of the band, as shown in Fig. 2 of the drawings. Formed in the cut-away portion of the circumference of the crown is an annular groove K, which is adapted to receive a metallic ring N, of any suitable metal, which may be soldered to the metallic band B, and a wire of solder O (shown clearly in Fig. 3 of the drawings) is also inserted in said groove before the crown is inserted in the upper end of the band. The parts being thus assembled the tooth may be subjected to an electric soldering apparatus or any suitable means whereby the wire of solder may be melted and the ring K in said groove securely soldered to the inner circumference of the band, thereby insuring the secure locking of the crown to the band.

In Figs. 6 and 7 of the drawings I have shown a slight modification in the manner of holding the crown to the band, in which instead of the groove formed in the circumference of the crown I form apertures P in the wall of the chambered portion of the crown and insert pins Q in said apertures; or the pins may be forced through the wall of the crown and afterward baked with the crown, whereby they may be securely anchored in the wall of the crown with their outer ends substantially flush with the circumference of the crown and in suitable locations to be soldered to the band. In the modified form the crowns, with the pins passing through the circumferences thereof and baked with the crowns, are inserted in the bands, and solder, which may be placed upon the ends of the

pins, will cause the pins to be securely anchored to the inner circumference of the band when heat is applied sufficiently to cause the soldering. By the modified form illustrated in Fig. 6 of the drawings it will be observed that the pins will be regidly held to the band and the crown anchored to the top of the band, while the undercut portion of the crown may be filled with cement to further strengthen and hold the crown in its proper position with relation to the root.

Referring to Figs. 9 and 10, a still further modified form of my invention is illustrated, in which I have shown a series of circumferential grooves or recesses T formed in the crown and in which solder is adapted to be melted for the purpose of securing the band to the crown and securely anchoring the same thereto.

While I have shown certain features embodying my invention, it will be understood that I may vary the same as to details of construction, if desired, without in any way departing from the spirit of the invention.

Having thus fully described my invention,

what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the root of a tooth, a band fitted thereto, means for securing the band to the root, a crown having an annular groove in the circumference thereof, and a metallic ring seated in said groove and adapted to be soldered to the inner circumference of said band, as set forth.

2. In combination with the root of a tooth, a band fitted thereto, means for anchoring the band to the root, a crown inserted in the upper portion of said band and provided with an annular groove in the circumference thereof, a metallic ring seated in said groove and adapted to be soldered to the inner circumference of the band, the under surface of said crown being undercut and adapted to receive a cement filling, as set forth.

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

CHARLES A. DAVIS.

Witnesses:

NELLIE A. MAYHEW,  
FRANKLIN H. HOUGH.