(No Model.)

# L. L. WHITE.

## MANUFACTURE OF METALLIC TOOTH CROWNS.

No. 590,799. Patented Sept. 28, 1897.

*Fig. 1.*

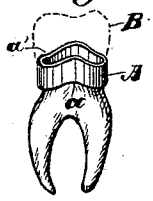



*Fig. 2.*

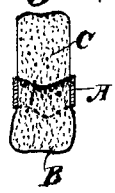



*Fig. 3.*

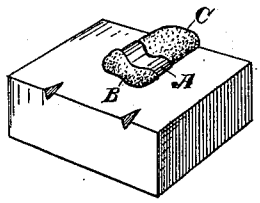
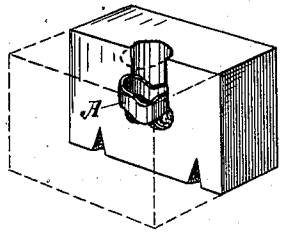



*Fig. 4.*




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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

LOUIS L. WHITE, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO THE L. L. WHITE TOOTH CROWN COMPANY, OF SAME PLACE.

## MANUFACTURE OF METALLIC TOOTH-CROWNS.

SPECIFICATION forming part of Letters Patent No. 590,799, dated September 28, 1897.

Application filed June 1, 1897. Serial No. 638,904. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS L. WHITE, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in the Manufacture of Metallic Tooth-Crowns; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the manufacture of seamless metallic tooth-crowns; and it consists, essentially, in details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 shows the band filled to the root. Fig. 2 shows the wax model with handle. Fig. 3 shows the same ready for the casting process. Fig. 4 shows one-half of the plaster model, the wax having been melted away.

My present invention is an improvement upon a patent issued to me November 10, 1896, No. 571,102; and the object is to make an accurately-fitting band for the tooth and to subsequently, by a series of operations hereinafter described, prepare and apply the tooth-crown to said band.

In carrying out my invention I first take the metal band A and fit it accurately to the root of the tooth for which it is desired. The cervical margin is cut at *a*, or, in other words, it is festooned to fit the festoon of the gum, and the upper end is cut away or fitted so as to allow the occluding tooth to close properly with relation to it and without contact with it, as at *a'*. The lingual and labial sides are next cut away to allow the subsequent filling of wax to be contoured to harmonize with the adjacent teeth. The top of the band is cut away upon the lingual and labial sides, leaving the part between the teeth or the proximal portion as high as possible. I then fill the band with a suitable soft wax B to the proper height and the mouth being closed the occluding tooth presses into the wax within the band, thus forming an exact impression of itself. The wax is now chilled with cold water, so as to harden it somewhat, and the band and wax are removed from the tooth-root, the wax being afterward contoured to the form of the tooth which is to subsequently occupy this position. The cervical margin of the band is then filled with wax, which may project half an inch, more or less, and forms a convenient device C for handling. The wax form and the band thus produced are now laid upon soft putty, one of the proximal sides lying upon the putty and being partly impressed therein. Plaster-of-paris is then poured over the opposite side and when set it is coated with shellac to prevent the other half of the mold sticking to it. The putty is then removed and the semimold being reversed the opposite side is covered with the plaster. After it has set the two parts of the plaster mold may be separated. The wax is then melted out from the band with hot water or otherwise and the band replaced in the imprint which it has already formed in the plaster mold. The latter is then closed and a sufficiently hard alloy is poured into the mold, filling it and the band with an exact form of the tooth projecting from the upper part of the band. When this is set, it is removed from the matrix and the band is removed from the alloy casting by cutting it open upon one side. I now take a disk of gold and by means common in the art force it through successive holes of a die-plate, said holes having gradually-decreasing diameters, until I obtain a cup-shaped piece or cap, which approximates in its interior capacity to the exterior of the metallic die just formed. This cup is then fitted to the metal die and is swaged or formed as described in my previously-mentioned patent or in any other suitable or desired manner. When thus formed, the fusible die is removed in any usual manner and the completed crown is filled with cement and fixed to the tooth-root.

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

1. The herein-described process of fitting an attachment for metallic tooth-crowns and forming a contour for the same, consisting in first fitting a metallic band to the root of the tooth to be crowned, filling the band so fitted with wax, impressing the face of the occluding tooth into the wax, removing the band and wax from the root and shaping the wax to the desired contour of the tooth.

2. The herein-described process of forming

a mold for shaping metallic tooth-crowns, consisting in first fitting a metallic band to the root of the tooth to be subsequently crowned, forming the cervical and opposite margins to fit the festoon of the gum, and to allow the occluding tooth to close with relation to it respectively, filling the band so fitted with wax, then closing the mouth and forming an impression of the occluding tooth within the wax, removing the band and wax and giving the latter the contour desired for the tooth-crown, and casting a mold of plaster about the band and waxen form.

3. The herein-described method of manufacturing metallic tooth-crowns, consisting in first fitting a band upon the root of the tooth to be crowned, filling the band with wax, forming an impression of the occluding tooth therein by pressing the tooth upon it, removing the band, giving the wax a contour of the desired tooth, filling the cervical margin of the band with a waxen extension, forming a mold of plaster-of-paris about the waxen impression and the band together, removing the wax from the band, replacing the latter in the plaster mold, forming a cast of fusible alloy within the mold and band and subsequently fitting the metallic crown or shell over the shape thus formed.

In witness whereof I have hereunto set my hand.

LOUIS L. WHITE.

Witnesses:
GEO. H. STRONG,
S. H. NOURSE.