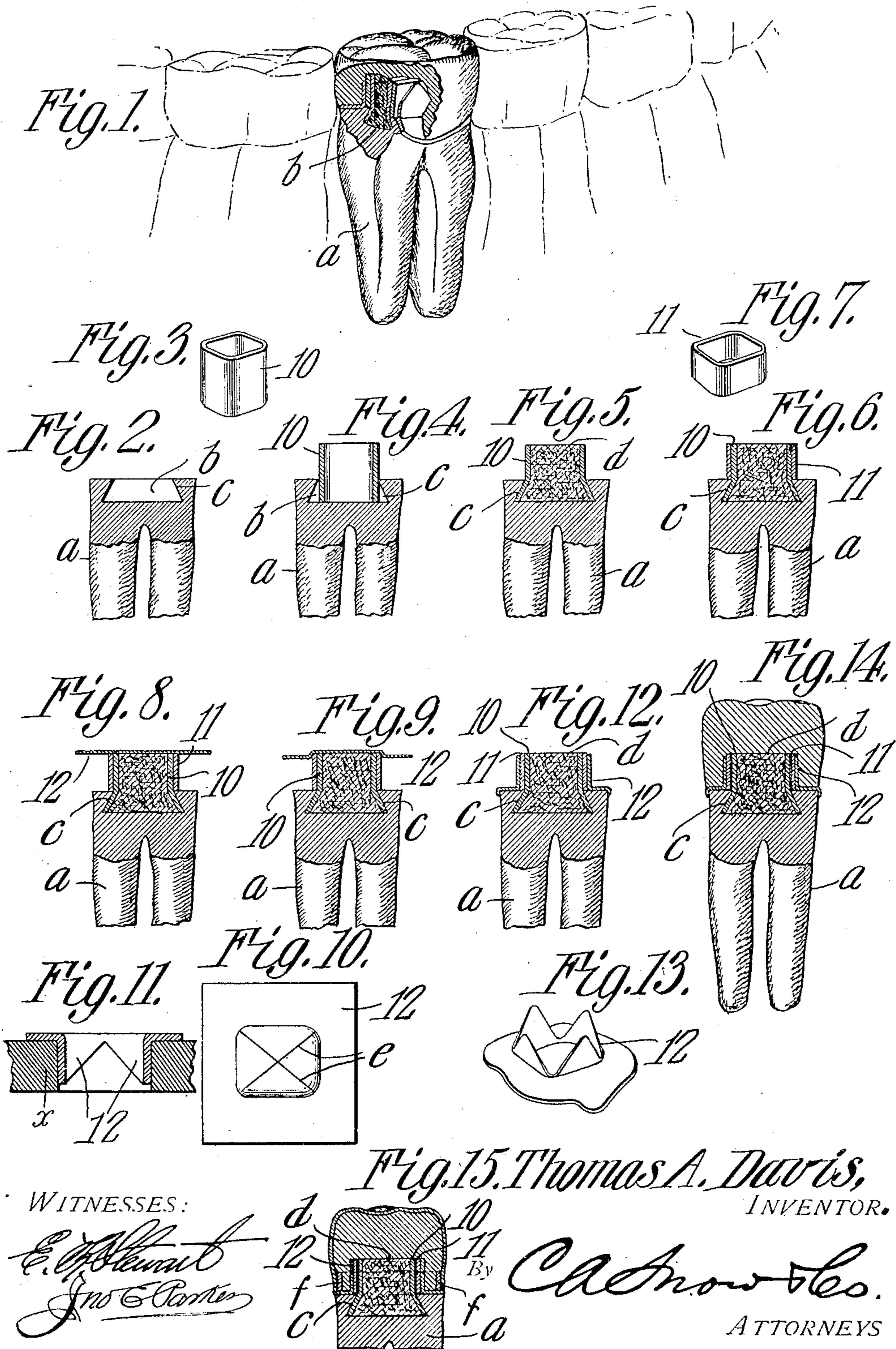


No. 876,043.

PATENTED JAN. 7, 1908.

T. A. DAVIS.
TOOTH CROWN.

APPLICATION FILED APR. 30, 1907.



UNITED STATES PATENT OFFICE.

THOMAS A. DAVIS, OF WARSAW, ILLINOIS.

TOOTH-CROWN.

No. 876,043.

Specification of Letters Patent.

Patented Jan. 7, 1908.

Application filed April 30, 1907. Serial No. 371,102.

To all whom it may concern:

Be it known that I, THOMAS A. DAVIS, a citizen of the United States, residing at Warsaw, in the county of Hancock and State of Illinois, have invented a new and useful Tooth-Crown, of which the following is a specification.

This invention relates to tooth crowns, and has for its principal object to provide a novel means for more securely holding the crowns in place, and to provide for more accurate fitting than in ordinary methods.

With this and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is a perspective view, partly in section, illustrating a tooth crown made in accordance with the invention. Fig. 2 is a sectional view of the root showing the manner in which the root is drilled and dressed for the reception of the post. Fig. 3 is a detail perspective view of the crown post detached. Fig. 4 is a view corresponding to Fig. 2 showing the crown post introduced into the socket or recess of the root. Fig. 5 shows the manner in which the crown post is filled with amalgam and expanded into the recess. Fig. 6 is a sectional view showing the first fitting of the crown collar to the post. Fig. 7 is a detail perspective view of the crown collar detached. Fig. 8 is a sectional view showing the first step in preparing the crown plate for attachment to its collar. Fig. 9 is a similar view showing the manner in which an impression of the collar is taken on the crown plate. Fig. 10 is a plan view of the crown plate with its initial depression. Fig. 11 is a sectional view showing the crown plate with the central portion turned or burnished down. Fig. 12 is a sectional view corresponding to Fig. 9, showing the manner in which the crown plate is placed on the crown collar and fitted to the root. Fig. 13 is a detail perspective view of the finished crown plate detached from the collar. Fig. 14 is a detail sectional view showing the crown and

root assembled. Fig. 15 is a similar view showing a gold or metal crown.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

In carrying out the invention, the root *a* is drilled out by means of a suitable bur in order to form a socket or recess *b*, and in this first step a squared ended bur may be employed, after which an inverted cone bur is used in order to undercut the wall of the recess, as indicated at *c*. Into this recess is placed a tube 10 formed of copper or other soft metal, the contour of the tube in cross section corresponding to the contour of the upper edge of the recess. The tube is then filled with amalgam *d*, as indicated in Fig. 5, and sufficient pressure is exerted on the amalgam to expand the lower edge of the tube into the undercut wall of the recess, so that the tube is firmly confined in place, and together with this filling of amalgam forms a post for the reception of the crown. The post having thus been prepared, a collar 11 is fitted thereto as indicated in Fig. 6, the collar being of the same contour as the post, and of a height equal to the distance between the surface of the root and the upper edge of the post. A thin plate 12 of gold or other suitable metal is then placed over the post and collar, as shown in Fig. 8, and is pressed down by the thumb or finger in order to form a depression, the outer wall of the depression following, of course, the contour of the periphery of the collar 11. This crown plate 12 is then placed on the work bench and is cut by means of a small chisel from the center outward toward the opposite wall of the depression, a number of cuts being made, as indicated at *e*, Fig. 10. The central portion of the plate is then turned or burnished down in an opening in a suitable block *x* in order that the points may be bent, as shown in Fig. 11, and the crown plate is then forced over the collar, so that the points will project upward, as shown, for instance, in Fig. 12, and in this case there are four of such points, the collar being approximately rectangular in form.

After the plate has been slipped over the collar, it is burnished down against the end of the root, and the points made by the cuts are burnished against the side of the collar until they closely fit. The plate and collar are then removed and soldered together, so that the lower end of the collar will be in

alinement with the lower face of the crown
 plate. The plate and collar now securely
 fastened together, are then returned to the
 post, and an automatic plugger is used to
 5 force the plate down against the upper sur-
 face of the root, until an imprint of the sur-
 face of the root is made in the plate. The
 crown and plate are then removed and the
 plate is trimmed down to about one-sixty-
 10 fourth of an inch from the outer line of the
 imprint, after which the plate and collar are
 returned to the post and thoroughly bur-
 nished, the projecting edge of the metal be-
 ing turned down all around the outer wall of
 15 the root under the gum as a guide in finish-
 ing. An articulating bite is then taken in
 any suitable modeling compound, and the
 cap is removed and placed in an articulator.
 A suitable porcelain shell or cap is then suit-
 20 ably ground to fit and cemented to the collar
 and plate which may be termed the cap, after
 which the finished crown is removed from
 the articulator, dressed down and polished,
 and is then ready to be placed on the post,
 25 any suitable cement being introduced for the
 purpose of securing the crown in place.

In the manufacture of the crown proper,
 any of the usual operations may be followed
 to manufacture a crown of porcelain, plati-
 30 num, or other material. Where a gold shell
 crown is to be made, as shown in Fig. 15, the
 method of procedure is similar to that fol-
 lowed up to Figs. 11 and 12. To the crown
 plate is then soldered a gum band *f* that is
 35 placed a slight distance within the inner edge

of the plate. The gold crown is then pre-
 pared and telescoped over the band *f*, as
 shown in Fig. 15, and united thereto by
 solder, after which the gold crown may be
 cemented to the post. The posts and pins 40
 for the front and side teeth are to be swaged
 in one piece with the band and gold rim to
 telescope over the post, the same as in the
 molars.

I claim— 45

1. A tooth crown connection comprising a
 post secured to the root, a collar encircling
 the post, a plate secured to the collar, and
 conforming to the contour of the upper face
 of the root, and a crown having a recess for 50
 the reception of the collar and permanently
 secured to said plate and collar.

2. A tooth crown connection comprising a
 post secured to the root and projecting
 therefrom, a cap including a collar and 55
 plate, the collar being arranged to fit around
 the post, and the plate being shaped to con-
 form to the contour of the upper face of the
 root, the edge of the plate being turned
 down or flanged to follow the contour of the 60
 outer surface of the root, and a crown having
 a recess for the reception of the collar and
 permanently secured to the collar and plate.

In testimony that I claim the foregoing as
 my own, I have hereto affixed my signature 65
 in the presence of two witnesses.

THOMAS A. DAVIS.

Witnesses:

WM. L. HILL,
 J. B. DODGE.