(No Model.)

C. H. LAND.

ARTIFICIAL TOOTH.

No. 400,921. Patented Apr. 9, 1889.

Fig. 1.

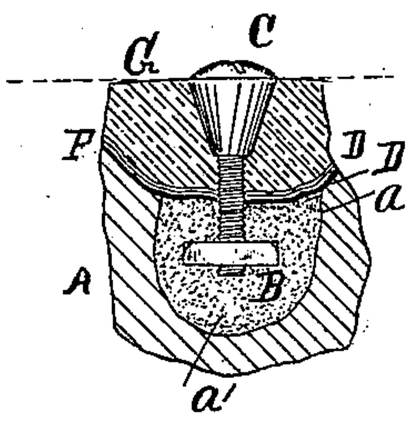

Fig. 2.

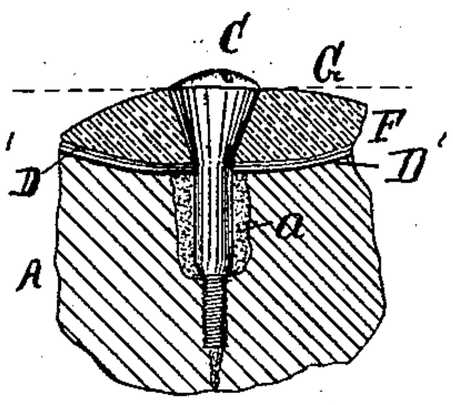

Fig. 3.

Fig. 4.

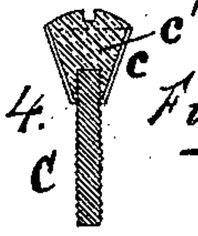

Fig. 8

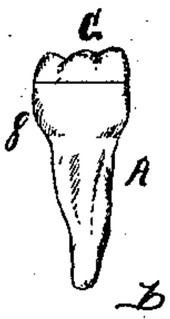

Fig. 5.

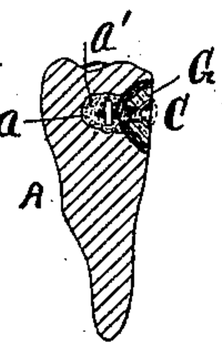

Fig. 9.

Fig. 10.

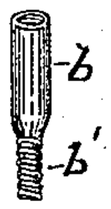

Fig. 7.

Fig. 6.

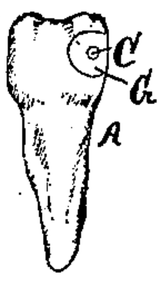

Fig. 11.

Attest.
Alfred H. Lowy
George H. Higgs.

Inventor.
Charles H. Land
By Purnell S. Wright.
Attorney.

UNITED STATES PATENT OFFICE.

CHARLES H. LAND, OF DETROIT, MICHIGAN.

ARTIFICIAL TOOTH.

SPECIFICATION forming part of Letters Patent No. 400,921, dated April 9, 1889.

Application filed March 14, 1888. Serial No. 267,138. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. LAND, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Fastening Means for Artificial Crowns and Fillings; and I 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, which form a part of this specification.

My invention relates to certain new and useful improvements in the construction of screws for certain forms of dental work, and to the manner of their application in a line of inventions relating to novel methods and devices for restoring decayed teeth, for which I have already obtained United States Letters Patent, and for which I have other applications now pending.

The object of my present invention is to facilitate the operations therein described.

My invention consists of the devices and appliances and their combinations, as more fully hereinafter described, and more particularly pointed out in the claims.

In the drawings, Figures 1 and 2 are enlarged views of details embodied in my invention. Figs. 3 and 4 are views in elevation and section of my improved screw. Fig. 5 is a sectional view of a tooth; Fig. 6, a view of the same, showing the completed process. Fig. 7 is a sectional view of a modification illustrated more fully in detail in Fig. 2. Fig. 8 is a view of the tooth showing my invention applied thereto in elevation. Fig. 9 is a section of the nut; Fig. 10, a modification of the nut, and Fig. 11, a porcelain-headed pin.

I carry out my invention as follows:

A represents a tooth which may have a cavity, as at *a*, or which may need to be built up or crowned.

In the case of a cavity to be filled, as illustrated in Fig. 5, and in larger detail in Fig. 1, the cavity is first made ready for filling in the usual manner. Then into this cavity I engage an anchoring device—as, for instance, a nut of any desired form, B—the nut being held in place by any of the well-known cements adapted for the purpose, or by gold or amalgam fillings, or in an analogous manner, the cement or filling forming a foundation, *a'*, or support to hold the anchoring device in place. A screw, C, or bolt, may be engaged with the nut, as this foundation or support is applied to secure the nut, so as to leave an open socket for the re-engagement of a screw therewith. Upon this foundation and anchoring device I also fit a metal plate, D, preferably of gold, having between it and the adjacent foundation a layer of some indestructible cement, D', as of gutta-percha, rubber, or analogous compound, so that when the plate is fastened in place the said cement or compound underneath it will effectually exclude the fluids of the mouth from access to the foundation material, and whereby the anchoring device is rendered permanent and secure. Upon this plate D, I then burnish or swage a platinum plate to form a matrix, F, shaped to the remaining portion of the cavity or lost portion of the tooth, and by this matrix I mold a porcelain section, G, of plastic porcelain paste or body, which is fused, and when completed is conformed exactly to the contour of the tooth-cavity to be filled. All this, however, is more fully described in another application filed simultaneously herewith. In this case, instead of securing the molded porcelain section in place in the manner described in said application, I contemplate the use of a peculiarly-formed screw or pin, which may be engaged in the anchoring device from the exterior of the porcelain section. I may accordingly employ a screw, C, of desired length, to be inserted from the exterior of the porcelain section, the screw being constructed with a porcelain head. To accomplish this end, the threaded portion of the screw may be of metal and provided with a countersunk metallic head, *c*, into which porcelain paste is molded, so as to extend over and above the metal, the porcelain head *c'* being also constructed with the usual slot to receive a screw-driver for driving the screw home. As the porcelain section and matrix have been formed about the screw, it will have a close fit. The head of the screw is preferably rounded, and, when driven home, may be readily ground down and polished to conform to the surface of the porcelain section, as shown in Fig. 6

In the case of a tooth with a straight root, I have provided a modified form of anchoring device, as shown in Figs. 7 and 10, the device in this instance being constructed with a tubular section, *b*, and a screw-stem, *b'*. The tubular section is adapted to receive a screw, and the screw-stem is adapted to be engaged in the nerve-canal, where the pulp is dead. In this case I prefer to enlarge the cavity adjacent to the tubular section and to embed around it the cement or analogous material, as shown in Fig. 7, the remainder of the operation being completed, as before described.

It is evident that the porcelain-headed screws may be made as articles of manufacture, and this I contemplate as coming within the scope of my invention; also, the tubular anchoring device with screw-stem shown in Fig. 10.

Where the anchoring device is set so that the fastening device extends at an angle to the porcelain section, and in other circumstances, if desired, I contemplate, instead of a porcelain-headed screw, simply a porcelain-headed anchoring pin or post similar in construction to the screw already described, except that the shank may not be screw-cut. Such a device I have shown in Fig. 11. By the use of proper cements, and, in some instances, in other ways, the pin may serve the same function as the screw, and my invention contemplates either as coming within the term "anchoring-post." In Fig. 11, C' represents such a post with its shank uncut and a porcelain head, c^2.

What I claim is—

1. In a tooth-filling appliance, an anchoring-post, in combination with a porcelain head molded thereon, substantially as set forth.

2. In a tooth-filling appliance, a porcelain-headed screw, in combination with a tubular anchoring device provided with a tubular stem, substantially as set forth.

3. In a tooth-filling appliance, a screw consisting of a metal screw-threaded shank, in combination with a porcelain head molded thereon, substantially as set forth.

4. The combination, with an anchoring device embedded in a cavity, of a porcelain section fitted upon the tooth, and a porcelain-headed anchoring-post for locking the porcelain section to the tooth, substantially as set forth.

5. The combination of the anchoring device, embedded as set forth, the plate D', an intervening protecting substance to exclude the fluids of the mouth, the matrix, and the porcelain section, said section engaged in place by a porcelain-headed screw, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

CHARLES H. LAND.

Witnesses:
N. S. WRIGHT,
GEORGE H. HIGGS.