

C. M. RICHMOND.
Artificial Tooth-Crown and Process of Setting the Same.

No. 224,355.

Patented Feb. 10, 1880.

Fig. 1.

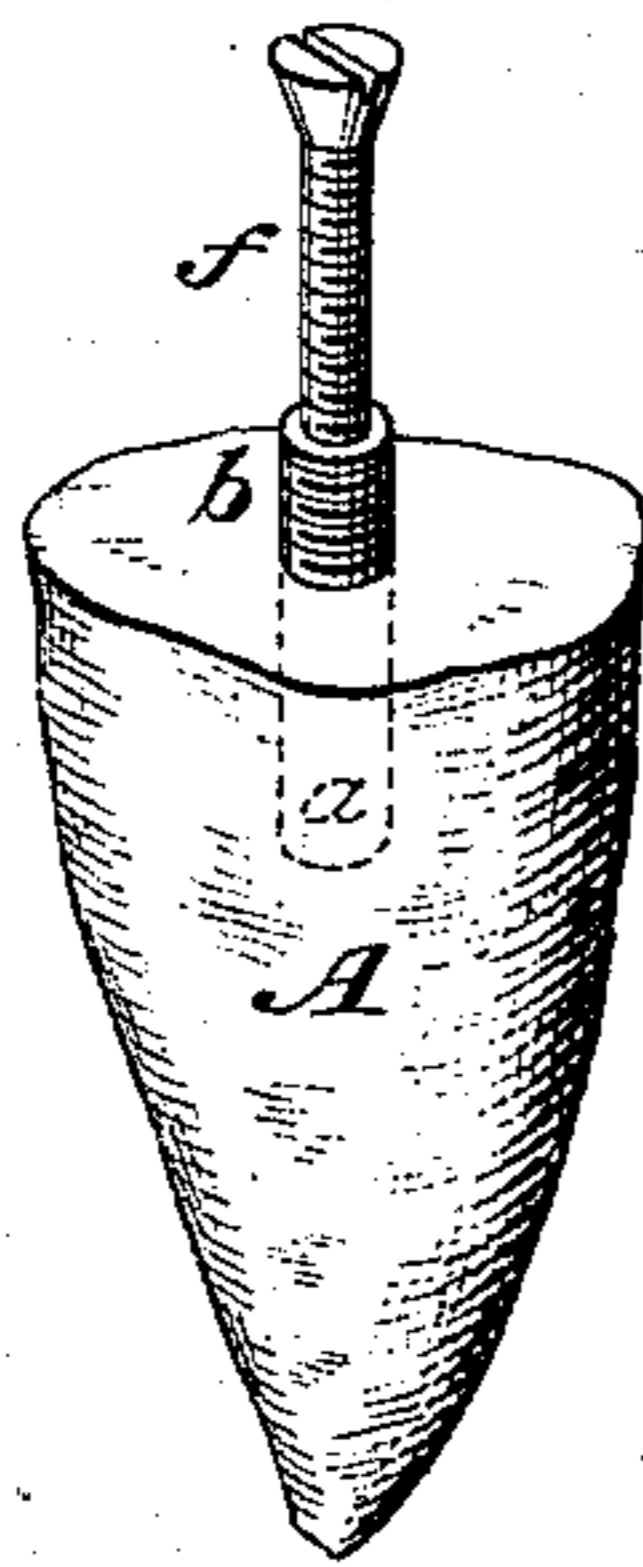


Fig. 4.

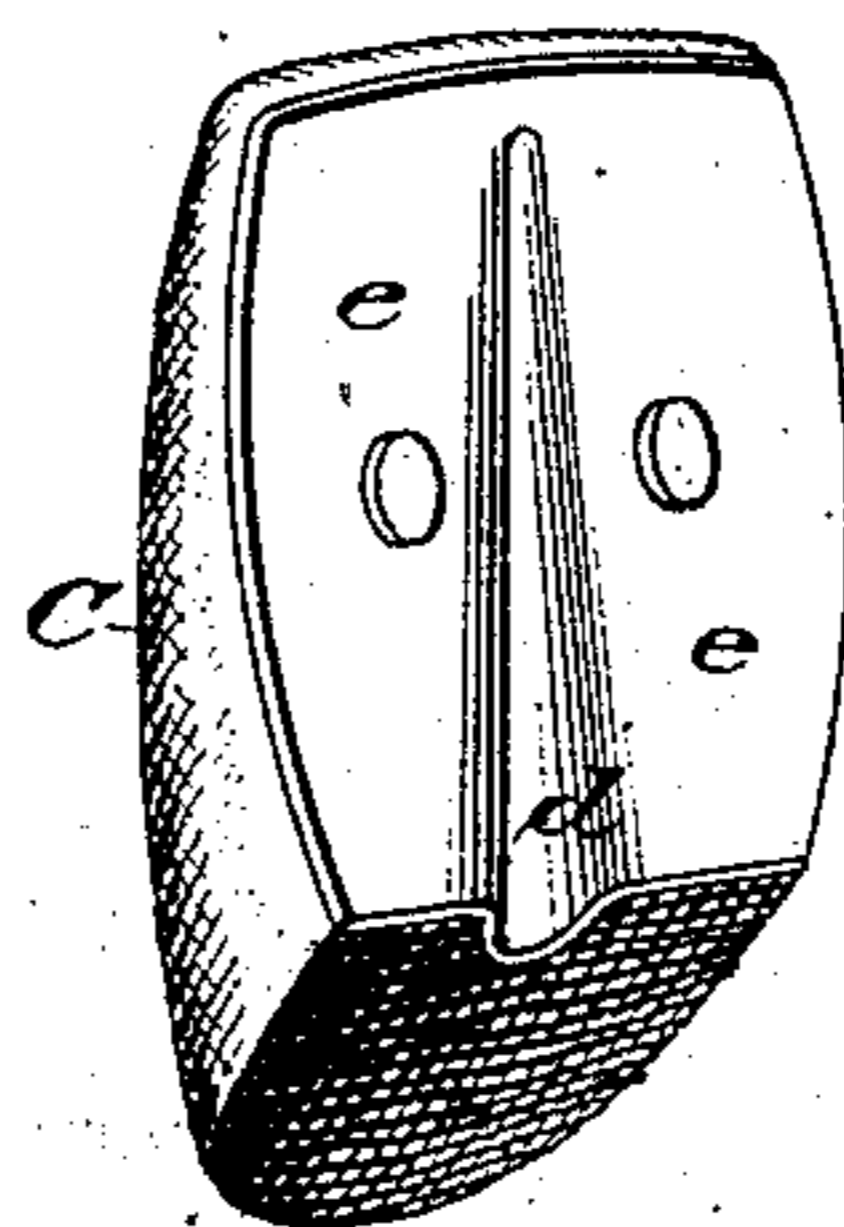


Fig. 2.

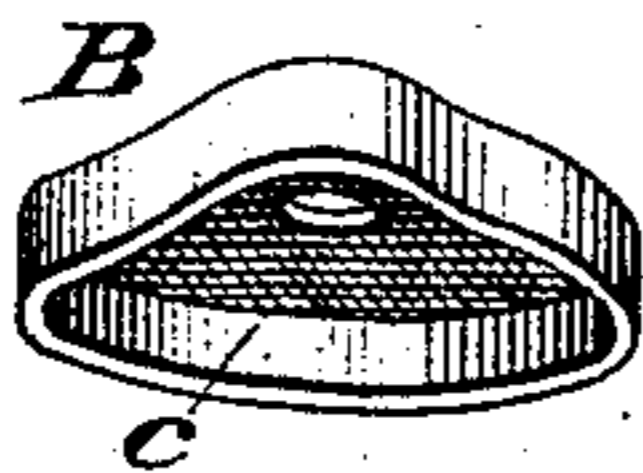


Fig. 5.

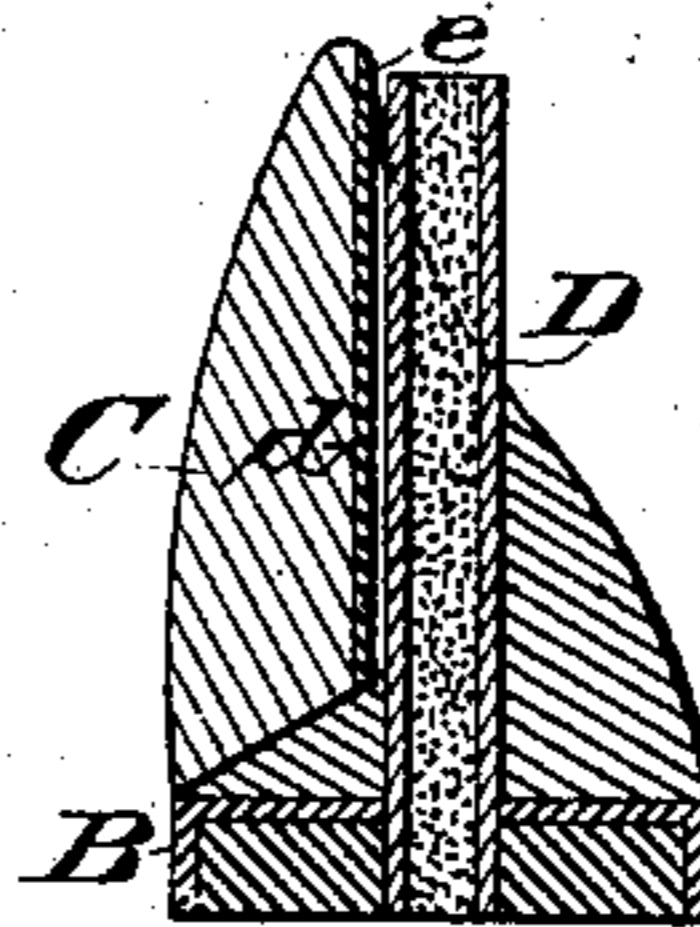


Fig. 3.

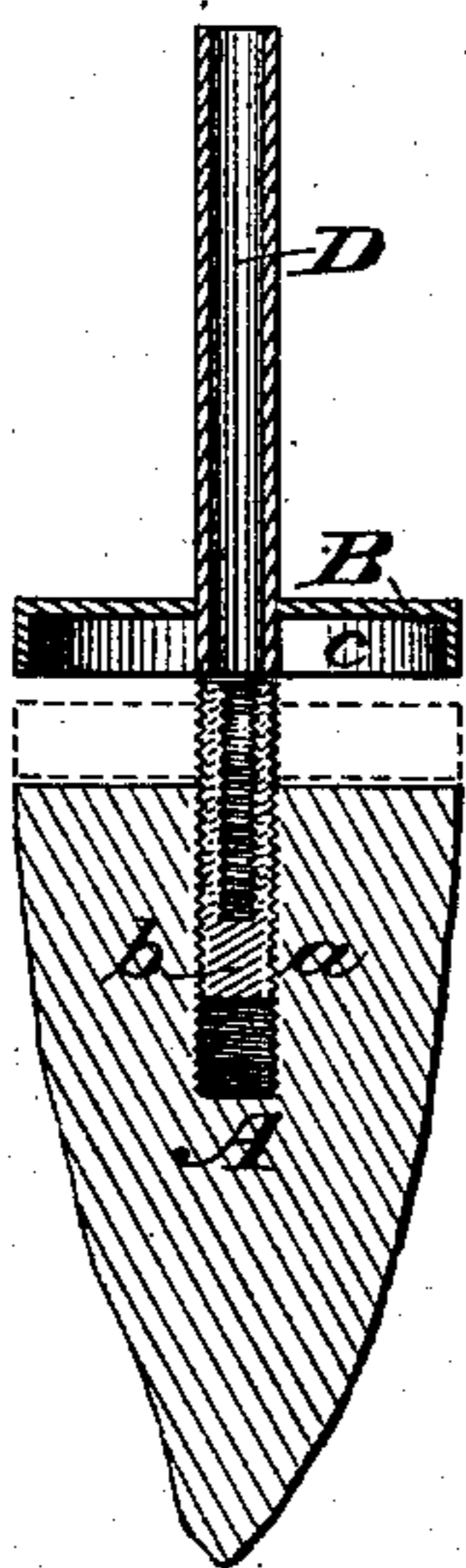
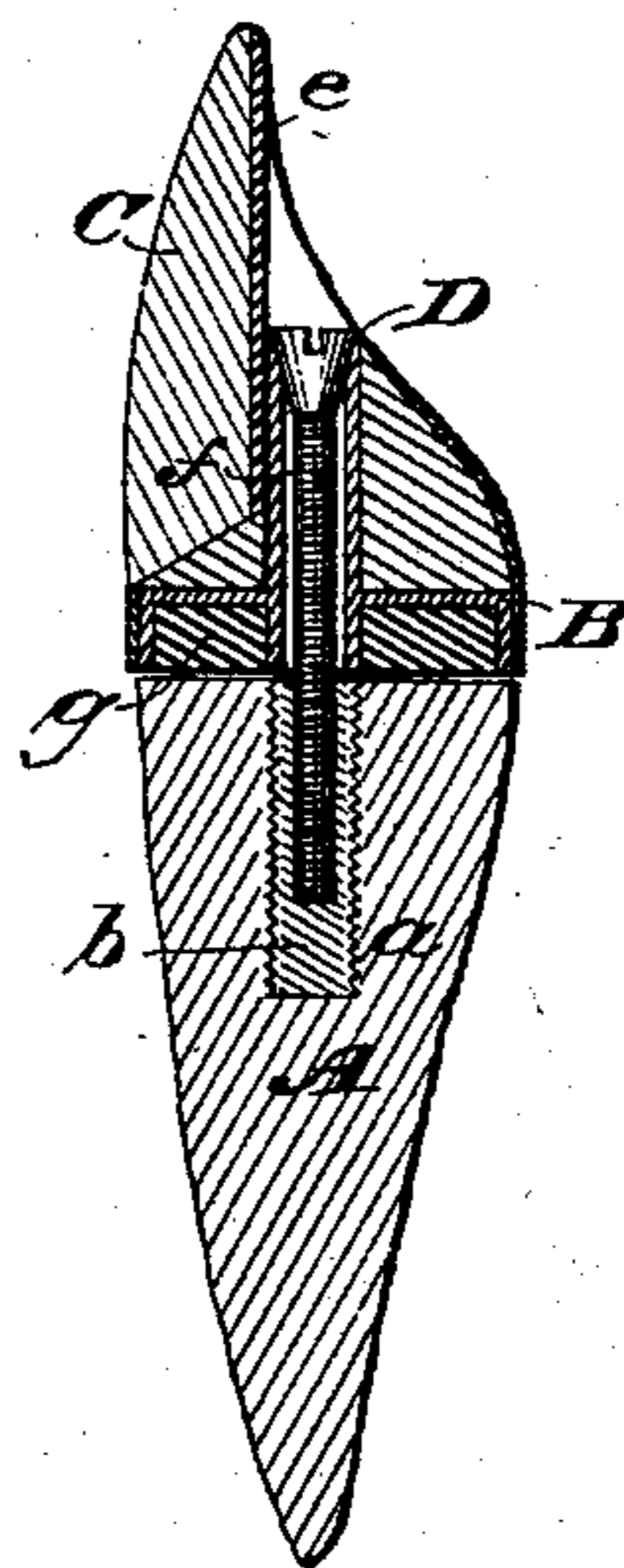


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

CASSIUS M. RICHMOND, OF NEW YORK, N. Y.

ARTIFICIAL TOOTH-CROWN AND PROCESS OF SETTING THE SAME.

SPECIFICATION forming part of Letters Patent No. 224,355, dated February 10, 1880.

Application filed October 13, 1879.

To all whom it may concern:

Be it known that I, CASSIUS M. RICHMOND, formerly of San Francisco, California, but now residing in the city, county, and State of New York, have invented a certain new and useful Improvement in Artificial Crowns for Teeth, as well as a certain new and useful Art of Setting Artificial Tooth-Crowns, of which crown and art the following is a specification.

My invention relates to an improved artificial tooth-crown, and to an improved method or art of and mechanism or devices for attaching such crowns to the roots or stumps of natural teeth remaining in the mouth, the object of my invention being to provide an artificial crown of improved construction and set, adjust, or secure it to the root of the natural tooth in a permanent, durable, and artistic manner, so that the tooth, when finished, will present a natural appearance and be capable of the same service as a wholly natural and uninjured tooth.

To attain the objects of my invention and carry my improved art of setting artificial tooth-crowns into effect, I cut, grind, or wear off the natural root or stump, preferably on a level with the gum, and bore or drill a hole or recess therein, into which is fitted or screwed a preferably internally and externally threaded bushing or metallic socket-piece. A preferably metallic base (so called by me) is then fitted upon and correspondingly shaped to the prepared root of the tooth, and is provided with a tube or extension which is fitted or secured thereto. The artificial crown, which is provided with a metallic backing or attachment, and with a longitudinal groove for the reception of the tube or extension of the metallic base, is then fitted upon said base, which constitutes the intermediate connection between the natural root and the artificial crown. The metallic base is preferably first secured to the artificial crown, and the two then fitted upon the natural root and firmly and permanently secured thereto by means of a headed screw, the screw being passed through the tubular extension of the base into the internally-threaded metallic socket-piece secured in the root, whereby, when said joining-screw is firmly screwed up, the artificial crown is securely held in place, and presents, when finished, the appearance

of a wholly natural tooth, while capable of performing its function.

The subject-matter claimed by me will be hereinafter specifically designated.

In the accompanying drawings, which show the best way now known to me of embodying my improvements, Figure 1 is a view of the root or stump of a natural tooth in which is inserted the metallic socket and screw which connect it with the metallic base and artificial crown; Fig. 2, a view of the base-connection; Fig. 3, a longitudinal section of the root, of the bushing or socket screwed therein, and of the metallic base and the tube through which the fastening or joining screw passes. Fig. 4 is a perspective view of the artificial crown with its metallic backing and groove; Fig. 5, a sectional view of the crown and base prepared for soldering together; and Fig. 6, a longitudinal section of a completed tooth, showing the artificial crown and natural root, with the devices for connecting or joining them together.

The root or stump A of the natural tooth, while in the mouth, is prepared for the reception of its artificial crown by cutting or grinding it off, preferably on a level with the gum, and is then provided with a suitable hole or recess, *a*, by boring or drilling, into which hole is inserted or screwed a metallic bushing or socket-piece, *b*, said bushing being preferably threaded internally as well as externally.

A base, B, preferably of metal, is provided, preferably, with a flange around its edge on the side which is placed next the tooth, constituting, in fact, a cup, *c*, the base being made of cup form for the reception of a suitable packing, *g*.

The artificial crown C is preferably made of porcelain or some other suitable material used in the construction of artificial teeth, and is provided, if made of a material not metallic, preferably with a metallic backing or a posterior plating or attachment, *e*, and with a longitudinal groove or recess, *d*, the said backing or plating preferably covering the entire rear or posterior surface, including the groove to which the backing conforms, and extending from its base nearly to its edge.

A metallic tube, D, passes through an opening in the base B, or extends or projects therefrom, and is fitted or inserted in the groove

d in the crown C, in which it is soldered or otherwise suitably fastened, and constitutes a guide or case, through which is passed a headed connecting or joining screw, *f*, which
 5 is screwed into the bushing inserted in the root, and thereby secures said root and the artificial crown firmly together.

The preferred method of applying the artificial crown is as follows: The root is prepared
 10 as above described, and into the hole therein is screwed the bushing or socket-piece part way only, as shown in Fig. 3. The base is then fitted to the root so as to conform thereto in size and shape. The metallic tube D is now
 15 inserted in the base B, and then placed upon the projecting end of the bushing and the base thrust down close to the root. While in this position a model or cast is made of the base, the tube, and adjacent parts of the jaw and
 20 root, so that the base can be fitted exactly, and the hole and tube therein adapted to the root, and the tube made to coincide exactly with the bushing, whereby, when the crown is applied, the connecting-screw will enter the
 25 bushing or socket-piece with precision. Next the metallic base is fitted to the artificial crown with the tube D placed in the longitudinal groove in said crown and the base in its proper relative position, the parts being connected to-
 30 gether with wax in the manner shown in Fig. 5. The crown is now inclosed in an investment material and the tube filled with such material to prevent the entrance of solder. The metallic base, the tube, and the metal-
 35 lic backing (platina, for instance) of the artificial crown are then soldered together with the blow-pipe, as shown in Fig. 6.

The cup or recess in the metallic base is next filled with a suitable packing, (vulcan-
 40 ized rubber, for instance,) and then applied to the root. The screw *f* is now passed through the tube and screwed tightly into the bushing in the root, thereby forming a close, permanent, and enduring connection between the
 45 artificial crown and the natural root, the operation exhibiting, when this is accomplished, the results shown in Fig. 6.

The head of the connecting or joining screw is preferably conoidal in shape, so as to fit
 50 closely in the connecting-tube. The rear or posterior of the tooth is, of course, finished off in the proper manner.

When metallic crowns are used the same

process is employed, as far as fitting and securing the metallic base is concerned, after
 55 which the metal is soldered to the base and drawn out in the usual manner.

I claim as my invention—

1. The hereinbefore-described improvement in the art of setting artificial tooth-crowns,
 60 which consists in preparing the natural root, fitting thereto a connecting-base, securing said base and artificial crown together, and connecting said artificial crown and base with the natural root. 65

2. The artificial tooth-crown provided with a longitudinal groove at its back, for the purpose described.

3. The artificial tooth-crown provided with the metallic backing or attachment and the
 70 groove, substantially as set forth.

4. The flanged metallic base to connect the artificial crown and natural tooth or root, substantially as set forth.

5. The metallic base provided with an open-
 75 ing therein, and constituting the means for connecting artificial crowns with natural teeth or roots thereof, substantially as set forth.

6. The combination, substantially as hereinbefore set forth, of the artificial tooth-crown
 80 with the base to which it is secured, when applied to a tooth.

7. The combination, substantially as hereinbefore set forth, of the artificial crown, the metallic tube, and the connecting-screw, which
 85 is passed through said tube to secure the crown in place.

8. The combination, substantially as hereinbefore set forth, of the metallic base, the socket-piece or bushing, and the connecting-
 90 screw.

9. The combination, substantially as hereinbefore set forth, of the base, the tube, the threaded socket or bushing, and the connect-
 95 ing-screw.

10. The combination, substantially as hereinbefore set forth, of the threaded bushing, the base, its packing, the tube, the connect-
 ing-screw, and the artificial crown.

In testimony whereof I have hereunto sub-
 100 scribed my name.

CASSIUS M. RICHMOND.

Witnesses:

J. ROMAINE BROWN,
 NORMAN S. TOWNER.