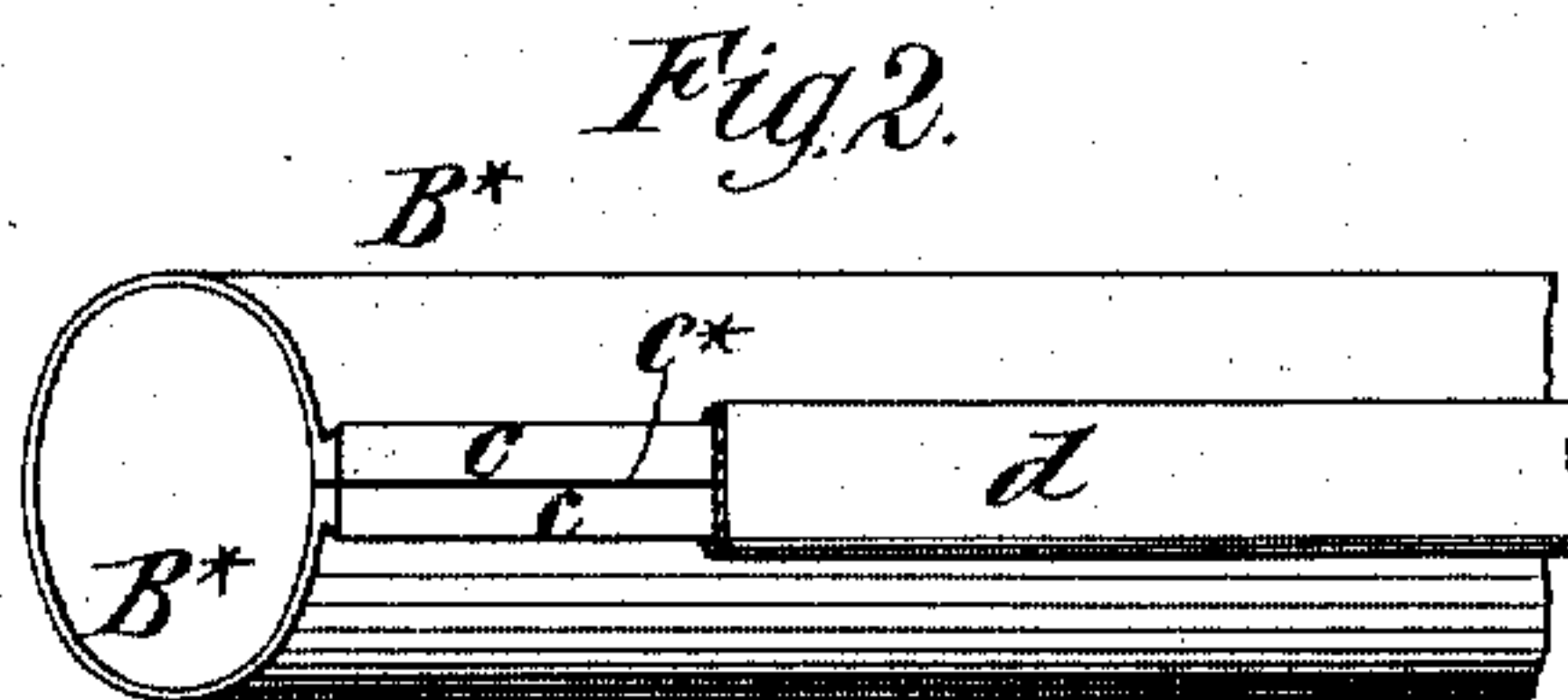
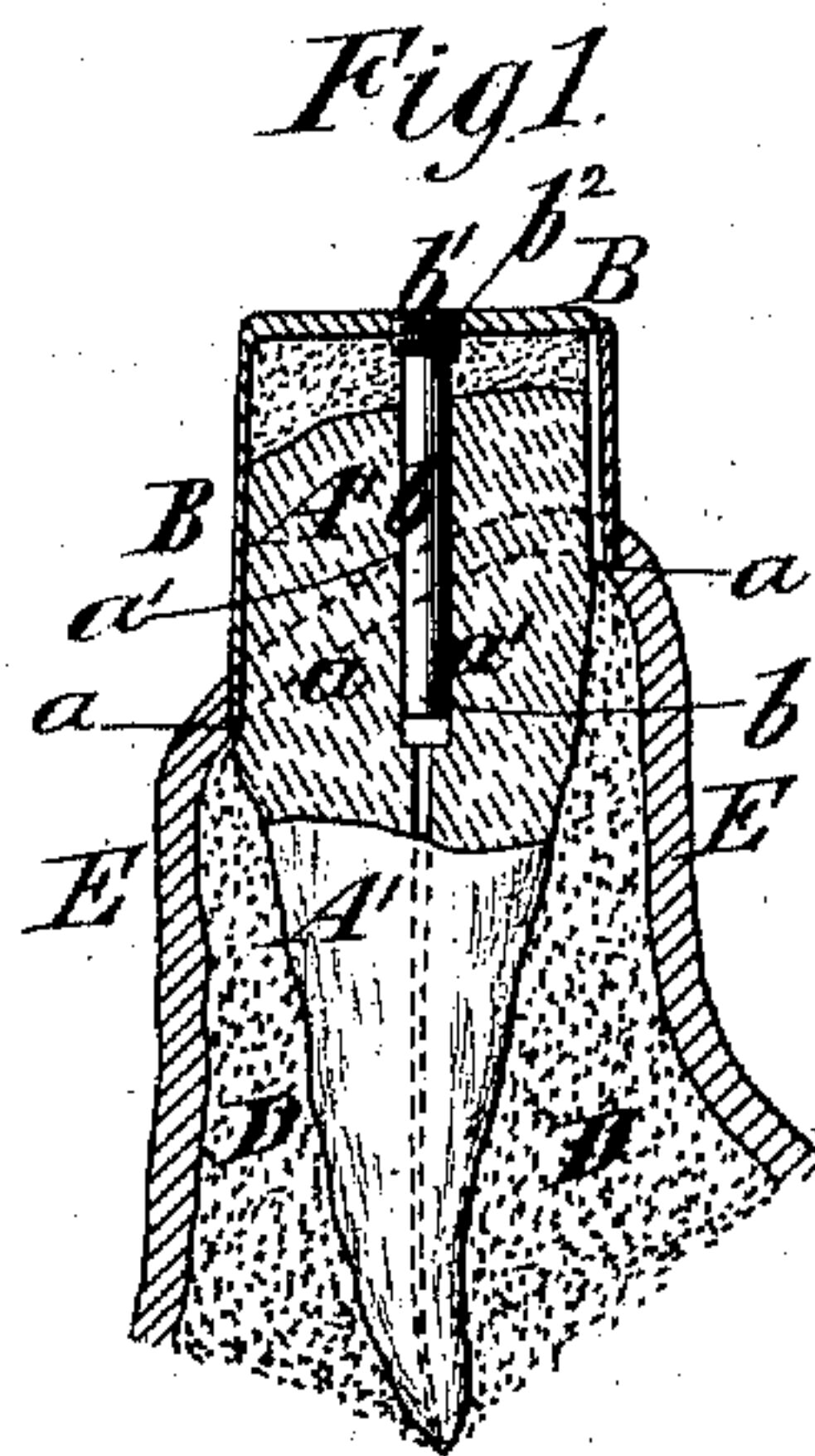


(No Model.)

C. P. GROUT.
ARTIFICIAL TOOTH.

No. 333,216.

Patented Dec. 29, 1885.



Witnesses:

C. Sundgren
Emil Horter.

Inventor:

Charles P. Grout
by his Attys
Brown & Hall

UNITED STATES PATENT OFFICE.

CHARLES P. GROUT, OF NEW YORK, N. Y.

ARTIFICIAL TOOTH.

SPECIFICATION forming part of Letters Patent No. 333,216, dated December 29, 1885.

Application filed May 4, 1885. Serial No. 164,401. (No model.)

To all whom it may concern:

Be it known that I, CHARLES P. GROUT, of the city and county of New York, in the State of New York, have invented a new and useful
5 Improvement in Artificial Dentistry, of which the following is a specification.

My invention relates to that class of artificial dentistry which involves trimming off or shaping the tooth roots or stumps and the
10 application thereto of artificial tooth-crowns, each consisting of a band portion fitting the trimmed exterior of a tooth or stump, and a closed top which forms the occluding surface.

In some cases artificial crowns of the kind
15 above described have porcelain faces fitted to them, so as to simulate the natural teeth; but where applied to back teeth they usually have no such porcelain faces.

One object of the invention is to construct
20 the artificial caps or tooth-crowns so that they may be more readily removed from the roots or stumps, if desired for any purpose, than has been possible heretofore. To this end I make the tooth-crown with an external dove-tailed rib or projection, the band portion be-
25 ing divided lengthwise through such rib or projection, and a key or clamp applied to such rib or projection for holding the abutting ends of the band portion together. When made in
30 this way the band will spring apart slightly as soon as the key or clamp is withdrawn lengthwise from the rib or projection thereon, and the crown may then be slipped off the root or stump much more readily than has been
35 heretofore possible.

Tooth caps or crowns of the kind to which my invention relates are frequently partially held in place by a pin or screw extending from the top of the crown downward into a hole or
40 socket formed by the enlargement of the nerve cavity or otherwise in the root or stump. Heretofore these pins have sometimes been fixed in the top of the cap or crown, so as to form an integral part thereof. It has also
45 been proposed to employ a hollow or tubular screw which has a flaring head, and may be inserted downward through the top of the tooth-crown and firmly secured by its thread within the cavity in the tooth root or stump,
50 the opening or passage through the screw be-

ing closed by a small screw-plug inserted into its outer end. This construction affords provision for reaching and treating the interior of the tooth root or stump by removing the small screw-plug which is screwed into the
55 outer end of the tubular pivot-screw. It has also been proposed to construct a cap which is adapted to fit over the end of the root or stump with a hollow pivot or projection which is received within a cavity or hole within the
60 root or stump, and then securing an artificial tooth crown or denture upon the capped root or stump by means of a screw having a conical head which fits a seat in the artificial crown and a threaded portion which enters the hol-
65 low projection of the tooth-cap.

According to my invention I form in the top of the cap or crown a screw-threaded hole, and I form the pin which is to enter the tooth root or stump with its upper portion slightly
70 enlarged and threaded to fit this hole, while its lower portion is of a size to enter the hole or socket in the tooth root or stump. I deem this construction and combination of the pin with a crown desirable, because by it I am
75 enabled to first place the cap or crown upon the root or stump, and to then inject into the cap or crown, by means of a small syringe and through the hole in the top thereof, a sufficient quantity of cement to very nearly fill
80 the cap or crown and the hole in the socket in the tooth, and I can then insert the pin downward into the hole or socket in the root or stump and screw the pin firmly into the cap or crown, which is threaded to receive in it
85 the threaded head of the pin. In this way I place in the cap or crown the proper quantity of cement to fill all space therein not occupied by the root or stump, and the pin serves to very firmly connect the cap or crown to the
90 root or stump.

The invention will be hereinafter described more in detail, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a sectional elevation of a tooth root or
95 stump and a crown embodying my invention applied thereto. Fig. 2 represents a perspective view, on the same scale as Fig. 1, of the tube which may be employed in making my improved crowns, and which embodies my in-
100

vention; and Fig. 3 is a transverse section of such a tube.

Similar letters of reference designate corresponding parts in all the figures.

5 In carrying out my invention I prefer to fit the metallic tooth caps or crowns upon a metal fac-simile of the mouth and tooth-roots, such fac-simile being produced as described in my application for Letters Patent, Serial No. 10 161,516, filed April 7, 1885.

In Fig. 1, A' designates the tooth root or stump, D the alveolar process or jaw-bone, and E the gum-tissue. The outer or exposed portion of the tooth root or stump down to or 15 near to the alveolar border *a* is trimmed off or cut to the desired shape, so that the cap or crown B will extend downward to or near to the alveolar border *a* and below the gum E.

In the tooth root or stump A' is formed a 20 hole or socket, *a'*, which may be made by drilling out the nerve-cavity, and which is of proper size to receive a pin, *b*. The upper end of this pin is screw-threaded, as shown at *b'*, and is slightly larger in diameter than 25 the body of the pin, so that the body may be inserted easily through a screw-threaded hole, *b''*, in the top of the cap or crown B, and into which the screw-thread *b'* of the pin may be tightly screwed.

30 Commonly the band portion of metallic caps or crowns of the kind described have consisted of a solid collar without any split or joint; but according to my invention the band portion of the cap or crown B is divided 35 lengthwise or split and its abutting edges secured together by a key or clamp, as I shall now describe.

In making caps or crowns according to my invention I employ tubes B*, such as are 40 shown in Figs. 2 and 3, and which may be of various sizes to fit tooth roots or stumps of different sizes.

Upon the exterior of the tube B* is a longitudinal rib or projection, *c*, the opposite 45 edges of which are V-shaped or dovetailed, as shown in Figs. 4 and 5. The tube is then split or sawed through this rib or projection, as shown at *c**, and the two edges are held together by a key or clamp, *d*, which em- 50 braces the rib or projection *c* and forms in effect a solid tube.

The rib or projection *c* may be made by soldering a piece upon the surface of the tube having a smooth exterior; or the tube may 55 be drawn with this dovetail or rib upon it; or the tube may be composed of sheet metal bent into shape and having its edges turned or doubled backward upon itself, so as to form a rib or projection with V-shaped outer 60 edges.

Tubes of this character may be made and sold by dealers in dental supplies, and the tubes may be sawed or split through the ribs or projections before they are sold to the den- 65 tist; or the ribs or projections may be left uncut and the dentist may make his caps or

crowns from such tubes, and, after they are otherwise completed, cut or split them through the rib or projection *c* and apply the keys or clamps *d* to them. 70

In Fig. 1, *d* represents the key or clamp which is applied to the band portion of the crown B, and which is upon the inner side of the crown, or that side which comes inner- 75 most when the crown is applied to the tooth-root A'.

The making of the crowns with split or divided bands held together by keys or clamps, as described, greatly facilitates the removal of such crowns from the tooth-roots, if desired 80 for any purpose, because when the key or clamp is withdrawn lengthwise from the rib or projection *c* the band will expand slightly, and may be then more readily withdrawn from the tooth root or stump. 85

In applying crowns I prefer to first place the crown B upon the tooth root or stump A', as shown in Fig. 1, and then, before the pin *b* is inserted, I inject into the crown, by means of a syringe, a proper quantity of cement, *o*, to 90 fill all space in the crown not occupied by the tooth root or stump. The pin *b* is then inserted downward into position in the hole *a'* and screwed tightly into the screw-threaded hole *b''* provided for it in the top of the cap or 95 crown.

It will be observed that a cap or crown having a split-band portion secured by a key or clamp, and a pin or screw, *b*, having an enlarged head, *b'*, which is fitted to a screw- 100 threaded hole, *b''*, in the top of the cap or crown, both conduce to a ready removal of the cap or crown from the tooth root or stump. In some cases it may be desirable that the pin or plug *b* should not be directly axial to the 105 cap or crown, but should be inclined relatively thereto, in which case the draft of the pin, in order to remove it, would be in a different direction from that of the cap or crown in order to remove the latter. 110

When the cap or crown and pin are combined as shown and described, all that is necessary to remove the cap or crown is to first take out the pin or screw *b*, and then to re- 115 move the key or clamp *d* and slip off the cap or crown.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A metallic tooth-crown having a divided or split-band portion, and a key or clamp ap- 120 plied thereto for holding the edges of the band together, substantially as and for the purpose herein described.

2. A metallic tooth-crown having upon it a dovetailed rib or projection, *c*, and split or 125 divided through such projection, and the dovetailed clamp or key slipped upon said projection for holding the edges of the band together, substantially as and for the purpose herein described. 130

3. A tube for making the band portions of tooth-crowns, having upon it a dovetailed rib.

or projection, *c*, and the sliding key or clamp *d*, fitting such projection, substantially as and for the purpose herein described.

4. The combination, with a metallic tooth-
5 crown having in its closed top a screw-threaded hole or socket, of a pin having a screw-threaded head, whereby it is fitted in the top of the crown and extended downward within

the crown to enter a hole or socket in the tooth root or stump, substantially as and for the purpose herein described.

CHAS. P. GROUT.

Witnesses:

C. HALL,

K. HAINES.

It is hereby certified that in Letters Patent No. 333,216, granted December 29, 1885, upon the application of Charles P. Grout, of New York, New York, for an improvement in "Artificial Teeth," an error appears in the printed specification requiring correction as follows: In line 46, page 2, the words "Figs. 4 and 5," should be stricken out and the words *Figs. 2 and 3* inserted instead; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 5th day of January, A. D. 1886.

[SEAL.]

H. L. MULDROW,
Acting Secretary of the Interior.

Countersigned:

R. B. VANCE,
Acting Commissioner of Patents.