

(No Model.)

C. P. GROUT.
ARTIFICIAL TOOTH.

No. 330,831.

Patented Nov. 17, 1885.

Fig. 1.

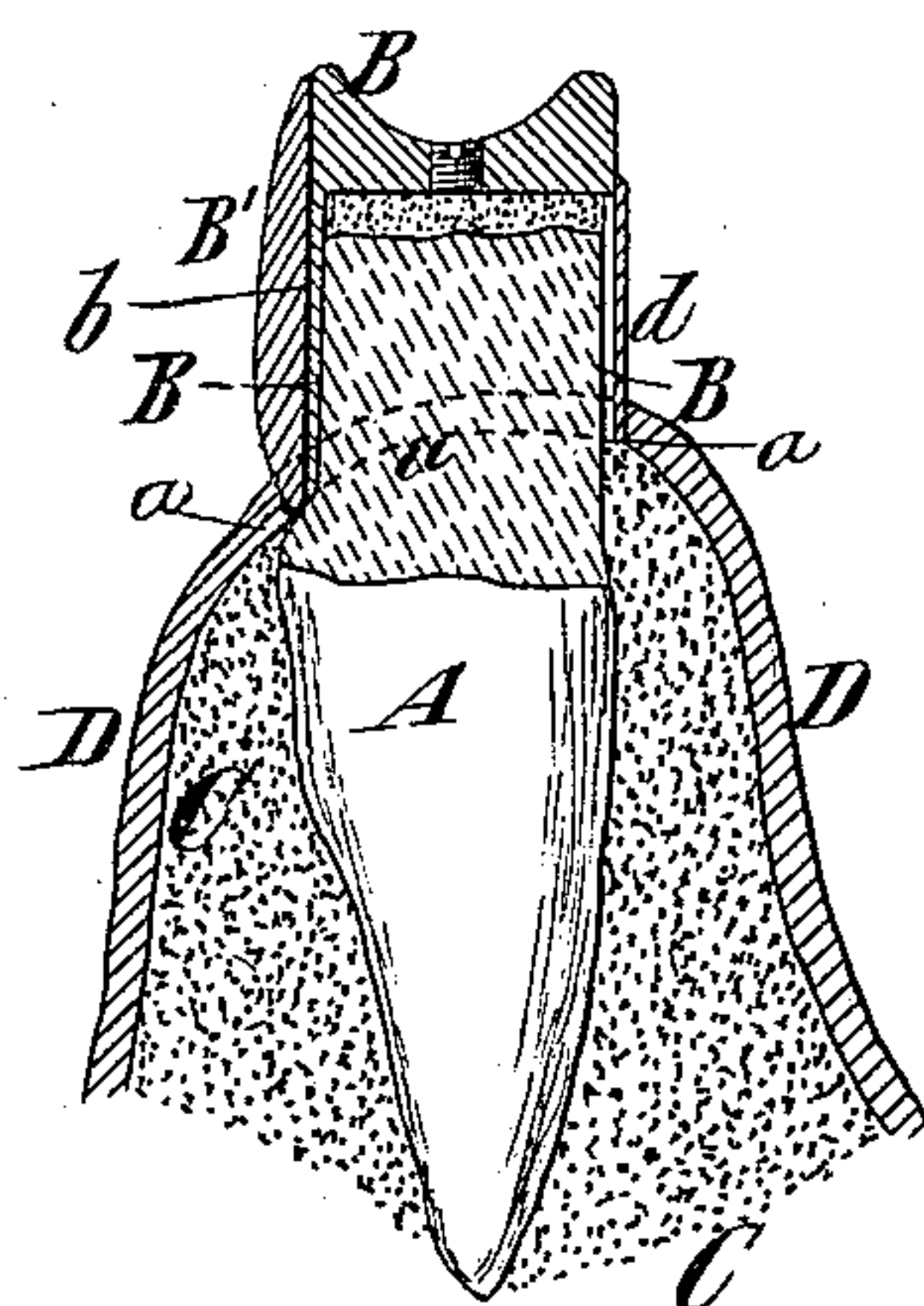
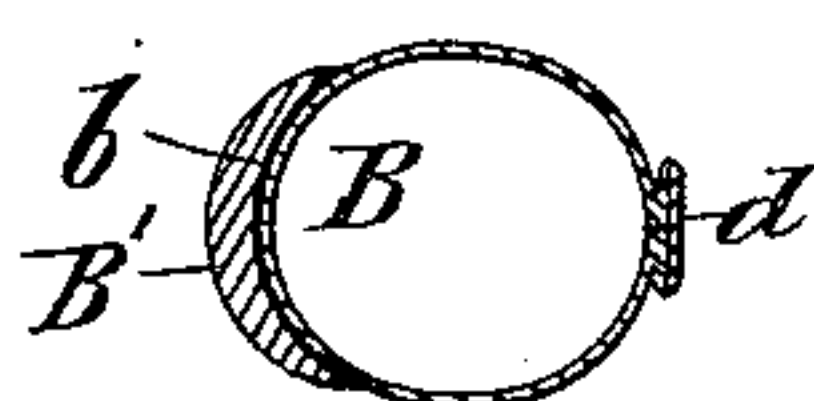


Fig. 3.



Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

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

ARTIFICIAL TOOTH.

SPECIFICATION forming part of Letters Patent No. 330,831, dated November 17, 1885.

Application filed July 9, 1885. Serial No. 171,042. (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 certain new and useful Improvement in Artificial Dentistry, of which the following is a specification.

My invention relates to artificial tooth-crowns which are provided with a band portion which receives and is fitted snugly upon a previously-prepared tooth root or stump, and forms the occluding surface for the opposite teeth to bite against. Very frequently it is necessary that these crowns should have porcelain faces affixed to them, so as to simulate the appearance of natural teeth; and it is necessary, too, in this way to crown teeth which would not otherwise have to be crowned in order that the crowns may support one end of a metal bridge which extends over a space from which teeth have been lost by decay.

When a porcelain-faced crown is to be applied to a tooth the nerve of which is alive and healthy, it is often necessary to cut away a considerable portion of the tooth structure in order to accommodate the porcelain face of the crown, which is usually of considerable thickness; and the object of my invention is to so construct porcelain-faced crowns which are to be applied to healthy teeth that it will be necessary to cut away very little of the tooth structure.

In carrying out my invention I grind a porcelain face or tooth to concave form upon the inner side, so that it will conform to the convex curvature of the band portion of the cap or crown, and the porcelain face has in its inner surface two pins, or a number of small pins, to which a metal backing may be secured. If a small drop of gold be placed on each of these pins, and the metal backing be laid thereon and then subjected to heat, the gold or gold solder will effect a firm union of the metal back with the pins, and a porcelain face thus backed may be soldered to the cap or crown. These pins need not project beyond the concave inner surface of the porcelain face, and when the course above described is observed the metal backing will be found to be firmly fixed to the porcelain face.

The advantage of a number of small pins is that they will yield to accommodate shrinkage in sweating the metal backing to the porcelain

face, and in securing the backed porcelain face to the metal crown, and the porcelain face will not be so liable to split as it would be if larger pins were used.

In the accompanying drawings, Figure 1 is a sectional elevation of a tooth with a metal crown applied thereto and having a porcelain face embodying my invention, and showing also the alveolar process or jaw-bone and the gum-tissue. Fig. 2 is a horizontal section of a crown and its porcelain face, and Fig. 3 is a view of the inner side of the porcelain face before the metal backing is applied thereto.

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

A designates the tooth; B, the metal crown which is applied thereto.

C designates the alveolar process or jaw-bone, and D designates the gum-tissue, which projects above the alveolar border, here represented by the dotted line *a*.

The artificial crown B, which is closed at the top, may be of the ordinary construction, and composed of a simple continuous band portion fitting the exterior of the tooth; or it may have a longitudinal split or division, and a clamp, *d*, applied thereto, securing the abutting edges of the band portion, as is described in my application for Letters Patent, Serial No. 164,401, filed May 4, 1885. The purpose of thus splitting or dividing the band is fully described in my aforesaid application, and such divided band and its key or clamp forms no part of my present invention.

B' designates the porcelain face of a tooth, which is as thin as is consistent with the necessary strength, and is ground concave upon its inner side, so as to fit the convex curvature of the band portion B, as will be readily understood from Fig. 2. This porcelain face B' has a number of small pins, *, projecting from or presented at its inner surface. These pins* may project very slightly beyond the inner surface of the porcelain face, or they may be ground off flush therewith.

The porcelain face B' has upon its inner surface a metal backing, *b*, which may be of gold or platina, or a bimetallic plate of gold and platina, or of any other suitable metal. This backing *b* is burnished down so as to fit the concave curvature of the inner surface of the porcelain face, and is also burnished over

the edges of the porcelain face, so as to cover them and make a neat finish, as shown in Fig. 1.

When the metal backing is to be fixed to the porcelain face, a small drop of gold is to be placed upon each of the pins *, and heat being applied after the metal backing is placed upon the porcelain face, the backing will be firmly united to the pins by the gold or gold solder, and the metal-backed porcelain face may then be soldered or sweated to the metal crown.

It will be seen that by grinding the inner surface of the porcelain face to a concave form, so that it will conform to the convex curvature of the band portion of the crown, I am enabled to obtain a porcelain-faced crown which will conform outwardly to the appearance of the natural teeth without cutting away any great portion of the tooth which is thus crowned, and hence without the pain to the patient incident thereto, and without weakening the tooth and incurring the possibility of disease or inflammation therein.

I do not limit my invention to porcelain faces having a number of small pins secured in them, as the porcelain teeth now in the market, and having two larger pins, may be ground down on their inner surface, so as to give them proper form, and then employed in

carrying out my invention. It is desirable, however, to employ porcelain faces having a number of small pins, because the small pins will yield more readily to shrinkage resulting from soldering the backing to the porcelain face and the backed porcelain face to the crown, and will not be liable to split the porcelain face.

I do not claim, broadly, as of my invention a metal tooth, including its masticating surface, combined with a thin porcelain facing.

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

1. The combination, with a metallic tooth-crown, of a porcelain face the inner side of which is concaved to fit the crown, and which is provided with two or more metal pins and a metal backing for the concaved side of the porcelain face, sweated to said pins and sweated or soldered to the exterior of the tooth-crown, substantially as herein described.

2. As a new article of manufacture, a porcelain tooth or tooth-face having its back concave and provided with metallic pins presented at the concave back, substantially as herein described.

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Witnesses:

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