(No Model.)

C. P. GROUT.

ARTIFICIAL TOOTH.

No. 354,833. Patented Dec. 21, 1886.

Fig. 1.

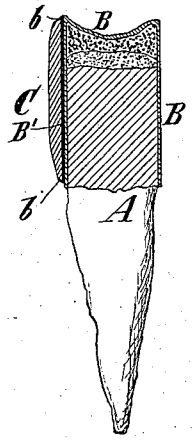


Fig. 2.

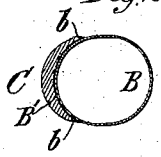


Fig. 4.

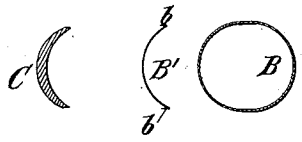
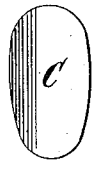


Fig. 3.



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. 354,833, dated December 21, 1886.

Application filed March 30, 1886. Serial No. 197,124. (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 Improvement in Artificial Tooth-Crowns and Porcelain Faces therefor, of which the following is a specification.

When artificial tooth crowns or caps of gold, platinum, or other analogous metal are fitted to teeth or tooth-roots which are visible when worn in the mouth, such crowns or caps are usually provided with porcelain faces to simulate the appearance of the natural teeth. In applying such porcelain faces to tooth-crowns it is usual to apply to the porcelain face a gold or other backing, which is soldered to pins presented at the back of the porcelain face, and the porcelain face thus backed with metal is soldered to the exterior of the tooth-crown.

In my Letters Patent No. 330,831, dated November 17, 1885, I have shown and described a thin porcelain tooth-face ground concave on its inner face, so as to render the porcelain face particularly adapted to crowns which are applied to teeth without much cutting away of the tooth structure, as would be necessary if the tooth-crown were to have secured to it a comparatively thick porcelain face or tooth with a flat back, as is usually employed. The porcelain face described in my aforesaid patent had metal pins presented at its concave back, and was backed with thin metal soldered to the pins, as above described, and the metal-backed porcelain face was afterward soldered to the tooth-crown.

Porcelain tooth-faces or teeth are liable to crack when subjected to the heat necessary for soldering gold, and, moreover, metal-backed porcelain tooth-faces are objectionable, because they show a blue color if platinum be used as a backing, and a yellow color if gold be used as a backing, and no provision is afforded for applying immediately behind the tooth-face a white cement or other composition or material which will cause the porcelain face to show white like the natural teeth, and which will absolutely and perfectly fill all minute spaces behind the tooth-face and between it and the metal, and prevent the entrance of all secretions behind the porcelain tooth-face.

In carrying out my invention I make thin porcelain tooth-faces or teeth, which are ground concave on the back, and are destitute of any metal pins, presenting a continuous and unbroken porcelain surface, and I provide for securing such porcelain faces or teeth on tooth-crowns without subjecting the porcelain faces or teeth to the heat necessary for soldering.

In the accompanying drawings, Figure 1 is a partly-sectional elevation of a tooth and a porcelain-faced crown secured thereon and made according to my invention. Fig. 2 is a horizontal section of the crown. Fig. 3 represents the inner concave surface or back of the porcelain face or tooth, and Fig. 4 is a horizontal section of the component parts of the porcelain-faced crown separated from each other.

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

A designates the tooth, and B the gold or other metal crown applied thereto.

C designates the thin porcelain face or tooth, which is applied to the front of the crown to simulate a natural tooth. This tooth-face or tooth is very thin, and is ground concave on the inner face or back. This porcelain face or tooth is destitute of any pins, and its inner face or back presents a continuous and unbroken porcelain surface. The back of the tooth-face or tooth C is ground to a curve, to approximately fit the convex curvature of the crown B in a horizontal direction.

The porcelain face or tooth is fitted within a lip or flange, *b*, on the front of the crown B, and after the face or tooth is in place thereon said lip or flange *b* is burnished in over the thin margin of the porcelain face C, and firmly secures it in place without the application of any heat. As here represented, the lip or flange *b* is formed by a thin plate, B′, of gold, platinum, or other metal, which is soldered to the front of the crown B. The plate B′ is first burnished down to fit the concave back of the tooth or tooth-face C, and its edge or margin is turned slightly outward to form the lip or flange *b*. The plate B′ (best shown in Fig. 4) is then soldered to the crown B, and at any convenient time thereafter the porcelain tooth-face or tooth C may be inserted within the lip or flange *b* and the latter burnished down over the edge thereof, in order to secure it firmly in place.

From the above description it will be understood that all heating and soldering together of parts of the crown is done before the porcelain face is combined therewith, and hence the latter will never be cracked by the flux used in soldering. This method of securing the porcelain face to the crown B also provides for introducing a small quantity of liquid gutta-percha, oxyphosphate of zinc, or other composition behind the tooth-face or tooth, in order to simulate the natural appearance and color of a tooth, and prevent the color of the metal from showing through the tooth-face or tooth.

It is not indispensable to my invention, so far as the combination of the tooth-face with the crown is concerned, that the tooth-face should be destitute of pins at the back, because a tooth-face having pins presented at the back, but having no projection, might be used. The pins would not, however, serve any useful purpose, and would be a detriment to the porcelain face.

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

1. The combination, with a metallic tooth-crown provided at the front with a flange or lip, of a porcelain face fitting the front of the crown within the flange or lip and secured in place by turning the flange or lip inward over its edge or margin, substantially as herein described.

2. The combination, with a metallic tooth-crown, of a curved plate soldered to the front of the crown and having its edge portion turned outward to form a lip or flange, *b*, and a porcelain tooth-face secured on the front of the crown by the turning inward of the lip or flange *b* over its edge, substantially as herein described.

CHAS. P. GROUT.

Witnesses:
C. HALL,
FREDK. HAYNES.