

(No Model.)

C. S. WIGGINS.
ARTIFICIAL TOOTH CROWN.

No. 452,533.

Patented May 19, 1891.

Fig. 1.

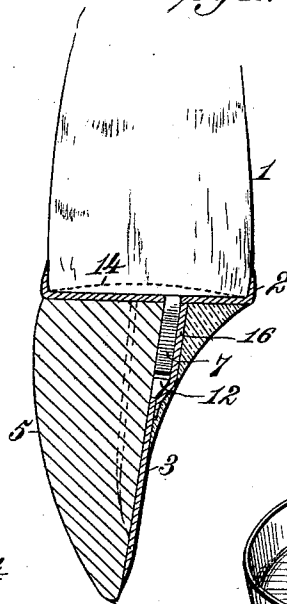


Fig. 2.

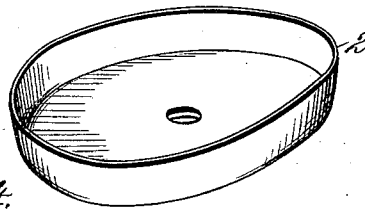


Fig. 3.

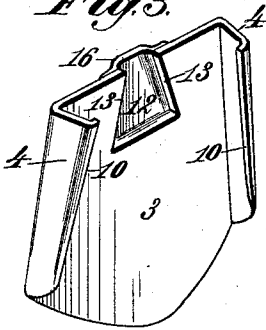


Fig. 4.

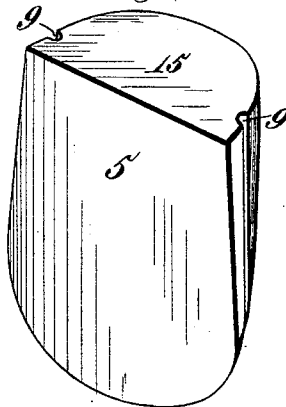


Fig. 6.



Fig. 7.

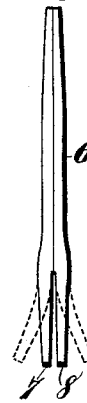


Fig. 5.

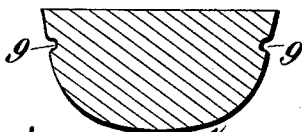
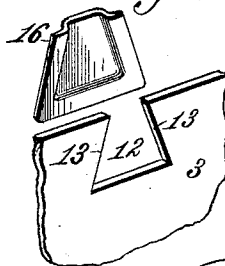


Fig. 8.



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UNITED STATES PATENT OFFICE.

CLARENCE S. WIGGINS, OF HORNELLSVILLE, NEW YORK.

ARTIFICIAL TOOTH-CROWN.

SPECIFICATION forming part of Letters Patent No. 452,533, dated May 19, 1891.

Application filed April 6, 1891. Serial No. 387,813. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE S. WIGGINS, a citizen of the United States, residing at Hornellsville, in the county of Steuben and State of New York, have invented new and useful Improvements in Artificial Tooth-Crowns, of which the following is a specification.

This invention has for its object to provide a novel, efficient, and durable artificial crown for natural roots of teeth which can be conveniently applied and the porcelain face be firmly secured without cement, while the parts are rendered susceptible of convenient detachment for repair, renewal, or other purposes.

The invention consists in a platinum and gold or other suitable cup-shaped cap to fit the extremity of the natural root, a socket-plate having side flanges, a triangular or equivalent shaped recess at its inner side and attached to the cup-shaped cap, a pin to be cemented in the canal of the natural root and having a divided or split outer end to pass through the base of the cup-shaped cap and be expanded in the triangular recess for rigidly but detachably connecting the parts to the root, and a porcelain face having side grooves engaged by the edges of the side flanges of the socket-plate to detachably secure the porcelain face in proper position.

The invention is illustrated by the accompanying drawings, in which—

Figure 1 is a sectional view of my invention on an enlarged scale for the purpose of clearly illustrating the details of construction. Fig. 2 is a detail perspective view of the cup-shaped cap. Fig. 3 is a detail perspective view of the flanged socket-plate. Fig. 4 is a detail perspective view of the porcelain face. Fig. 5 is a transverse sectional view of the same. Fig. 6 is a detail elevation of the pivot-pin. Fig. 7 is a similar view showing a modified construction of pivot-pin, and Fig. 8 is a detail perspective view to exhibit the manner of constructing the triangular or similar shaped recess in the socket-plate for receiving the divided or split end of the pivot-pin.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

The numeral 1 indicates a portion of the

natural root of a tooth; 2, the cup-shaped cap; 3, the socket-plate provided at each side with a lateral flange 4; 5, the porcelain face, and 6 the pivot-pin having one extremity divided or split to form two separable prongs 7 and 8.

The porcelain face 5 is provided at each side with a groove 9, and, since the porcelain face, as usual, tapers from the biting-edge to the base, the grooves gradually converge from the biting-edge to the base. These grooves are adapted to be engaged by the edges 10 of the side flanges 4, which are formed integral with the plate 3, and since these parts constitute in fact a socket I have termed the plate a "socket-plate."

The socket-plate is formed, as hereinafter explained, with a triangular-shaped recess 12 at the center of its top portion for the purpose of forming divergent side walls of edges 13 in such manner that when the divided or split end of the pivot-pin is inserted into the recess such split end can be expanded by spreading the tongue-pieces 7 and 8, and thereby firmly attach the socket-plate to the pin.

The cup-shaped cap-plate is fitted to the extremity of the natural root, and the pivot-pin is suitably cemented in the nerve-canal of the root and projects through the base-plate of the cap for the purpose of engaging with the triangular recess.

The platinum or other metallic pivot-pin may be a solid piece formed with a division to constitute the tongue-pieces 7 and 8, as in Fig. 6, or the pin may be composed of two separate pieces soldered together for a portion of their length, so that they can be spread apart at one end, as in Fig. 7.

In carrying my invention into practice I have devised an efficient method of constructing and applying the parts, which will be clearly understood by those skilled in the art from the following explanation. The extremity of the root is trimmed and slightly concaved, as indicated by dotted lines 14 in Fig. 1, and a band of gold is fitted around the root, after which the divided or split pivot-pin is set in cement about half-way in the nerve-canal of the root, the remaining space being filled with amalgam. A thin plate of platinum is punctured for the passage of the pivot-pin and is properly molded or shaped to the ex-

tremity of the root and to the pin. This plate of platinum is fitted to the band and pressed into the concavity of the root, and then the band and plate are removed and soldered together for the purpose of constituting the cup-shaped cap. The concavity in the cap is filled flush with coin gold to give the solid bearing and enable the cap to be accurately supported, while the required strength and thickness is provided at points about the pivot-pin. The porcelain face is now ground at its top portion or base 15 to accurately fit the metallic cap, and a backing-plate, of platinum, is molded or shaped to the porcelain face and to the side grooves thereof, after which the porcelain face is removed and pure gold flowed on the side flanges 4 to strengthen the parts. The porcelain face is now replaced by sliding it into engagement with the edges 10 of the side flanges 4 on the socket-plate 3, and the latter is burnished and perfectly fitted into the side grooves of the porcelain face. The socket-plate is now placed in position on the metallic cup-shaped cap, the position and direction of the pin, its width, and height being accurately marked on the socket-plate. The plate 3 is then provided at the center of its top portion with a triangular-shaped recess 12, over which is soldered or otherwise secured a concaved cap-piece 16, composed, preferably, of platinum and soldered with coin gold. This construction completes the triangular-shaped recess 12 and provides the required space for the spread of the divided or split end of the pivot-pin. The porcelain face is now engaged with the socket-plate and the whole arranged on the pivot-pin and cap in the mouth. The socket-plate is secured to the cup-shaped cap by wax, the whole carefully removed from the root, the porcelain face detached, and the remainder of the crown invested in plaster and marble-dust in equal parts. When this has set, the wax is removed and sufficient gold flowed into its space to

form the contour of the lingual portion of the tooth. By this means the porcelain face does not come in contact with the heat at any time.

By my invention it is possible to detach the entire crown by pressing the tongue-pieces 7 and 8 of the pivot-pin toward each other, and subsequently the porcelain face can be removed, all of which is advantageous for the purpose of rendering the parts susceptible of convenient detachment for repair, renewal, or other purposes.

I may employ the removable crown-piece as a base for the attachment of any porcelain face or tooth desired.

Having thus described my invention, what I claim is—

1. In an artificial crown for natural roots, the combination of a cup-shaped cap to fit the root, a socket-plate having side flanges, a socket-plate attached to the cap and having side flanges and an approximately triangular recess, a pivot-pin to be cemented in the canal of the natural root and having a divided or split outer end to be passed through the base of the cup-shaped cap and expanded in the triangular recess for rigidly but detachably connecting the parts to the root, and a porcelain face having side grooves engaged by the edges of the side flanges on the socket-plate to detachably secure the porcelain face in position, substantially as described.

2. The combination of the pivot or pin having a split or divided outer end with the metallic cap having a recess with diverging sides engaged to the pin by expanding the split or divided end thereof and an attached porcelain face or tooth, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

CLARENCE S. WIGGINS. [L. S.]

Witnesses:

E. D. L. ROBERESON,
MATT B. GREENE.