T. H. WHITESIDE.

TOOTH CROWN.

APPLICATION FILED MAR. 16, 1915.

1,172,652. Patented Feb. 22, 1916.

Fig. 1.

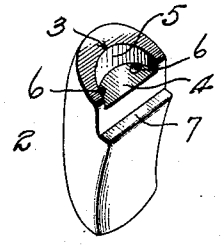


Fig. 2.

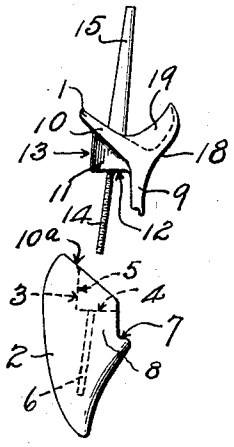
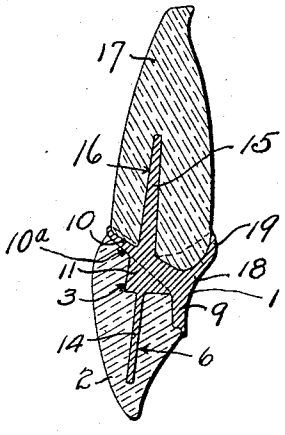


Fig. 3.



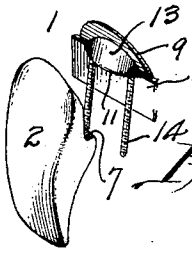


Fig. 4.

Witnesses

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TOOTH-CROWN.

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To all whom it may concern:

Be it known that I, THOMAS H. WHITESIDE, a citizen of the United States, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Tooth-Crowns, of which the following is a specification.

This invention relates to dentistry, and more particularly to a novel artificial tooth mounting of special utility in the preparation and fitting of crowns.

Primarily, the invention contemplates making the several parts of the mounting of substantially uniform size and design, so that they can be expeditiously dressed and fitted to meet the requirements of each particular case. That is to say, the invention aims to substantially standardize a novel form of tooth crown which will greatly facilitate the application of the crown to the tooth root and also strengthen the rigid connection between the porcelain facing and the metallic backing of the crown. Accordingly, to attain these ends the invention proposes to utilize a novel metallic backing in combination with porcelain facings which are readily interchangeable, thus rendering it possible to keep a well assorted stock of facings on hand which may be easily adapted to the backing with very little grinding or dressing of the parts.

A further object of the invention is to provide a simple and substantial construction whereby the full biting force imposed upon the working edge of the facing is not borne entirely by the elements which secure it to the backing. In other words, the invention makes provision for the metallic backing to share the great part of the biting force, thus reducing the possibility of shearing off the related parts.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

A preferred embodiment of the invention is shown in the accompanying drawings, wherein—

Figure 1 is a perspective view of a porcelain crown facing constructed in accordance with the present invention. Fig. 2 is an elevation of a complete tooth crown prior to assembling, and showing the metallic backing having a tooth-root post, thus adapting the invention to be applied to a natural tooth root. Fig. 3 is a sectional view showing the application of the invention to a natural tooth root. Fig. 4 is a perspective view showing the application of the invention to bridge work.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

In carrying out the invention, it is proposed to construct the crown of a backing element 1 and facing element 2, made of dental materials customarily used for such purposes, as for instance, gold, ankrite, platinum or other metal for the former, and porcelain or other suitable equivalent material for the latter.

Referring to the tooth facing 2, it will be observed that the same presents the general outline and contour of a natural tooth. The attaching end portion of this facing is preferably formed with a segmental anchoring recess 3 having a flat base 4 and an arcuate side wall 5 which latter is intended to be dressed and ground to its final shape or size when fitting it to the metallic backing. The body of the facing has formed therein the longitudinally extending pin receiving sockets 6 which open into the recess 3 approximately at the junction of the side and base walls thereof. These sockets are preferably inclined forwardly from this point toward the biting edge of the facing, thus occupying an oblique position. The rear side of the facing is cut away or rabbeted to provide an abutment shoulder 7, leaving a reinforcing body of the material as at 8 for abutting engagement with the metal backing 1.

The metal backing element 1 preferably comprises a substantially vertical sheath portion 9 and an inclined cap portion 10, which are so arranged that the former fits flush within the rabbeted or cut away portion at the rear of the facing and the lower edge thereof rests firmly against the abutment 7, while the cap portion fits flush onto the inclined end 10^a of the facing. The cap portion 10 of the backing preferably carries a projecting bearing boss or shoulder 11 of solid metal whose lower face 12 is substantially flat and horizontal like the base 4 of the recess 3, and whose side face 13 is rounded or circular and capable of being easily

dressed and ground to make a snug and accurate fit with the correspondingly shaped wall 5 of said recess 3.

Projecting obliquely from one face of the boss 11 is a pair of securing pins 14 adapted to enter and be cemented in the pin-receiving sockets 6 of the facing. This provides a secure anchoring and a rigid interlocking of the parts.

In connection with the pins 14, it will be apparent that the arrangement and location of the same materially aids in distributing the effect of the biting force, thereby not only adding to the stability of the portion of the facing farthest from the backing, but strengthening the entire structure. Also, since the face 12 of the boss or shoulder 11 flushly contacts with the base 4 of the recess, the said pins 14 are greatly relieved of the shearing stress which would otherwise exist, and subject the pins to much strain at this vital point.

The backing element 1 may be provided as shown in Fig. 2, with a root-post pin 15 adapted to be cemented in a previously prepared socket or canal 16 in a natural tooth root 17. When thus used, it is desirable to flow a body of gold filling or its equivalent 18 onto the rear portion of the backing to fill out the outlines of the tooth, and also provide a cap portion 19 which performs the function of a protecting cap or crown for the end of the natural tooth root.

Regardless of whether the invention is employed as shown in Fig. 2, or as shown in Fig. 4 in connection with bridge work, it will of course be understood that the same general structural features and characteristics of the backing and facing will be adhered to. That is to say, in all adaptations of the invention, the backing includes the cap and sheath portions and has on its underside approximately at the junction of said portions, an enlargement of metal which forms a boss or shoulder 11 capable of being dressed and fitted to the dressed facing cavity or recess designed to receive the same. This enlargement of the metal 11 not only provides a firm and solid abutment to carry the facing securing pins 14, but also coöperates with the rounded recess in the facing 2 to provide an extended and substantial bearing therefor.

In its adaptation for bridge work, the root-post is of course omitted, and the body portion or plate of the backing bridged to the natural teeth according to the requirements of each case and skill of the dentist.

I claim:

1. A tooth crown comprising a porcelain or equivalent facing having a recess provided with a flat base wall and an arcuate side wall, and also having pin receiving sockets communicating with said recess, and a metal backing having a solid bearing boss provided with a curved side wall, and facing securing pins carried by said bearing boss, said boss and pins adapted to respectively fit into said recess and pin receiving sockets.

2. A tooth crown comprising a porcelain or equivalent facing having a recess and pin receiving sockets in communication therewith, said facing also having a rabbeted portion providing an abutment shoulder, and a metal backing having a cap portion and a sheath portion, a bearing boss carried by said backing, and facing securing pins carried by said bearing boss, said bearing boss and facing securing pins adapted to respectively fit into said recess and pin receiving sockets of the facing, and the lower edge of said sheath portion flushly abutting with said shoulder.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

THOMAS H. WHITESIDE.

Witnesses:
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AGNES A. JOHNSTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."