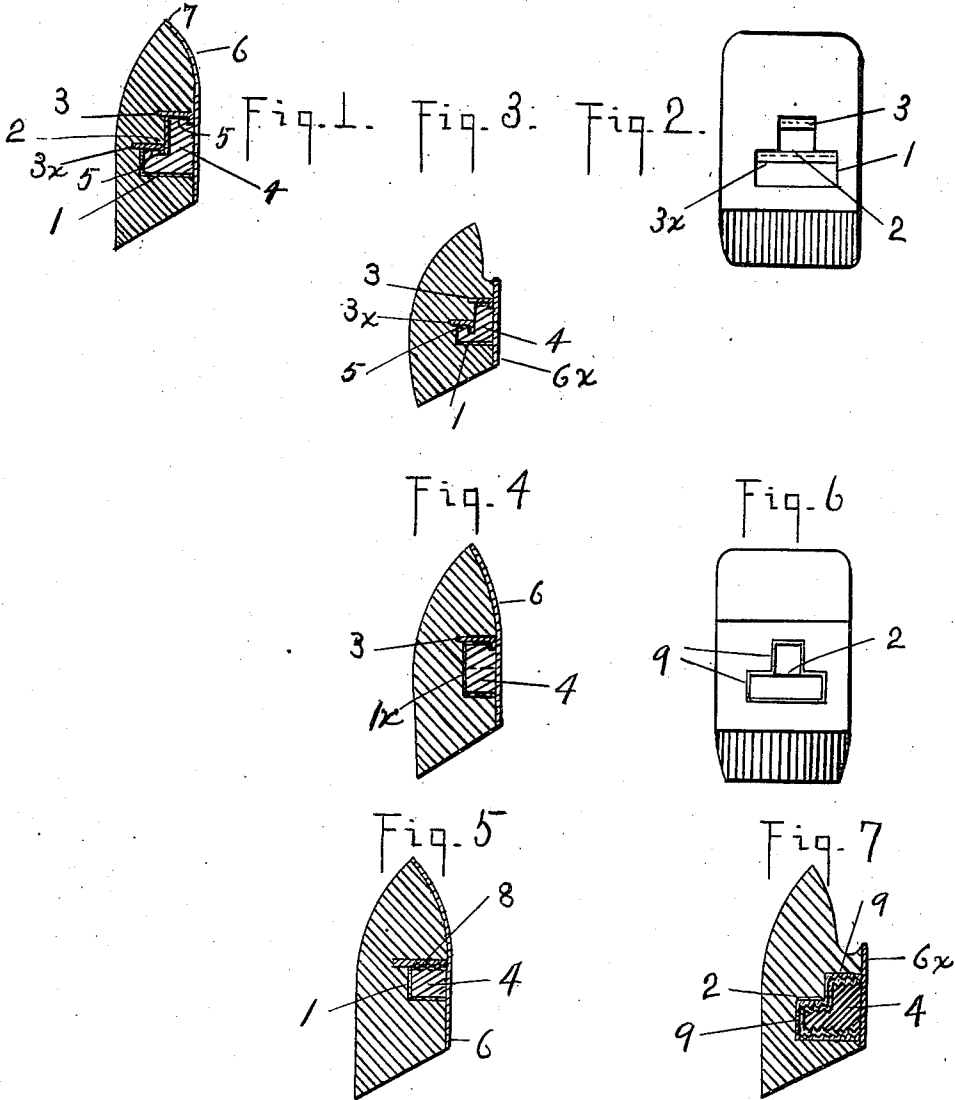


M. E. MERKER.
TOOTH.

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TOOTH.

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To all whom it may concern:

Be it known that I, MELVIN E. MERKER, a resident of New York, in the county and State of New York, have invented certain new and useful Improvements in Teeth; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

This invention relates to teeth, and particularly to improvements in means for securing porcelain teeth or facings to gold or other plates or backings, which effect economy in manufacture, and ease in manipulation in use; and to a construction by which it is easy to replace broken teeth without removal from place of the metal plates; and to a construction by which porcelain teeth or facings can be secured to bridge plates when the latter are fixed in a mouth, without heating such selected teeth and consequent discoloration thereof.

The invention consists in the construction hereinafter described and pointed out.

In the drawing which illustrates the invention and forms part of the specification,—Figure 1 is an enlarged vertical section of a tooth with the improvement applied; Fig. 2 is a rear view of the tooth without the plate; Figs. 3 and 4 are views similar to Fig. 1 but showing modified forms; Fig. 5 shows a modified anchor and anchor-engaging means. Fig. 6 is a rear side view of a tooth with a T-shape cavity in its rear vertical side, and an anchor therein corresponding in shape to that of the cavity; Fig. 7 is a central vertical section of such a tooth and anchor with a post cemented therein, and a plate secured to the post.

In the rear vertical side of each tooth I form a cavity extending into the tooth from one fourth to three fourths the thickness of the tooth. In the preferred form the cavity 1 is made in the shape of a T for an upper tooth, or of an inverted-T for a lower tooth. In either case the part of the cavity corresponding to the head of the T is toward the base of the tooth, and about twice as deep as the part corresponding to the stem of the T. The walls of the cavity are made at or nearly at right angles to the length of the tooth, and this provides a shoulder 2 centrally within the cavity, as well as at the end thereof.

When the teeth are made, platinum or

other suitable anchors 3 are baked in place therein directly against the outer end or wall of the cavity, and other anchors 3* are baked in so as to extend directly against the outer wall of the deeper part of the cavity, the shorter member of each anchor 3 terminating at the plane of the back of the tooth, and the shorter member of each anchor 3* terminating in the plane of the shallower part of the cavity. These short members of the anchors extend but slightly into the cavity or overhang it.

Numeral 4 denotes a post of gold, platinum, or other suitable metal, corresponding in shape to the cavity but slightly smaller, (that is, enough smaller to permit its ready admission to the cavity having anchors as described) and having extensions 5 adapted to enter behind the inward projections of the anchors, the outer end of the post being in the plane of the back of the tooth, and soldered to a gold or other suitable plate 6 forming a backing for the whole or for a part of the tooth. Such plate may extend to and protect the cutting or operating end of the tooth, as at 7 in Fig. 1. The plate and post are joined before the tooth or facing is placed and cemented on the post.

In Fig. 3 the back plate 6* is not extended to the end of the tooth. This form is preferable for use in plate work, and when long teeth are required in bridge work.

In Fig. 4 the cavity 1* in the tooth is not stepped as in Fig. 1, that is, the floor is flat, and in this case a single anchor 3 is baked into the tooth.

The part of the anchor extending along a wall of the cavity instead of having a single right angle flange projecting inwardly, as stated, may have several ribs 8 on the cavity side of the anchor to engage corresponding ribs on the post, as in Fig. 5.

In the form shown in Fig. 6, the anchor baked into the tooth when the latter is made is in the form of a hollow body 9, corresponding in shape to that of the cavity in the rear side of the tooth in which it is fixed, and is open at the side corresponding to the rear surface of the tooth. As shown in Fig. 7, the side walls of the body 9 are roughened, as by ribs facing the cavity. The part of the body 9 resting against the bottom of the cavity may be left smooth; and it is not essential that this part of body 9 be used.

In use, teeth with anchors baked therein,

of suitable form and color, are selected and set in position with their backing plates on to get them in proper relation to adjoining teeth; then the teeth or facings are removed
 5 from the plates and posts, and the plates suitably soldered or secured in place, after which the facings are placed on the posts and secured by cement which fills the space
 10 between the walls of the cavities and the posts, this being easily effected without the objectionable use of heat, whereby discoloration and injury of selected facings are avoided.

In case of breakage of a tooth, it is only
 15 necessary to replace it by a new facing on the same post without removal from its place of the backing plate and post, and without the use of soldering heat in connection with the new facing.

20 The invention is not limited to T-shape cavities, nor to cavity walls strictly at right angles to the length of the tooth. In all forms shown the space between the post and anchor or between the post and cavity
 25 walls contains cement, and in some cases the engagement of the roughened or formed post and anchor is effected entirely by the cement.

30 Having described the invention what I claim is,—

35 1. The combination of a metal plate adapted to fit the back of a tooth, a tooth engaging post of substantially the shape of the tooth-cavity but smaller soldered to such plate, a tooth having a cavity in its rear side adapted to fit said post, one or more anchors
 baked into the tooth against a wall of the cavity and facing the cavity, and cement filling the space between the cavity wall and

the post securing the post in the cavity, 40 whereby the post may be soldered to the plate, and then the tooth connected to the post without at any time subjecting the selected tooth to heat of soldering.

2. A tooth having a cavity in its rear ver- 45 tical side, one or more anchors baked into the tooth directly against a wall of the cavity, a post secured in the cavity, the anchors and posts having engaging means, and a plate soldered to the post and extending on 50 the back of the tooth.

3. A tooth having in its rear vertical side a cavity of T-shape, one or more anchors baked into the tooth directly against a wall 55 of said cavity, and a post also of T-shape connected to a backing plate secured in said cavity.

4. A tooth having in its rear vertical side a cavity of T-shape, a part of the cavity be- 60 ing of greater depth than another part, anchors baked into the tooth directly against a wall of said cavity, and a post also of T-shape and secured to a back plate in the cavity and cemented therein.

5. A tooth having in its rear vertical side 65 a cavity with parts of unequal depth, an anchor in the deeper part directly against a wall of said cavity, another anchor in the shallower part directly against a wall of said cavity, and a post in the cavity engag- 70 ing both anchors.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

MELVIN E. MERKER.

Witnesses:

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 J. W. DAWSON.