W. E. SANBORN.

STRENGTH REINFORCEMENT FOR TOOTH FILLINGS.

APPLICATION FILED NOV. 8, 1915.

1,172,486.

Patented Feb. 22, 1916.

Fig. 1.

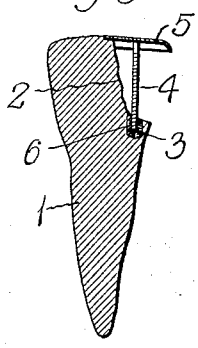


Fig. 2.

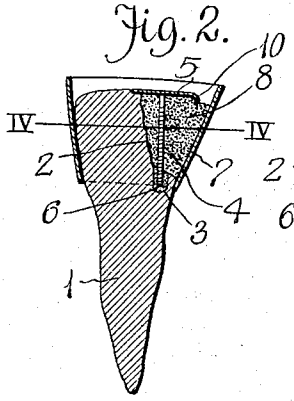


Fig. 3.

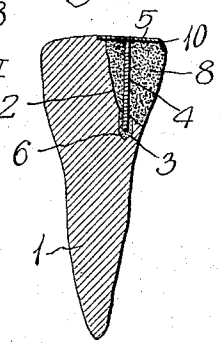


Fig. 5.

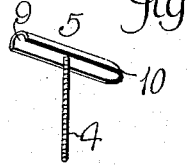


Fig. 4.

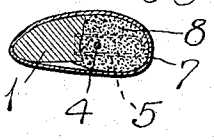


Fig. 6.

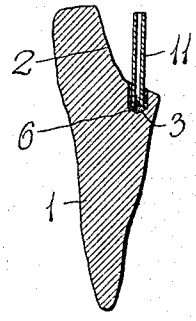


Fig. 7.

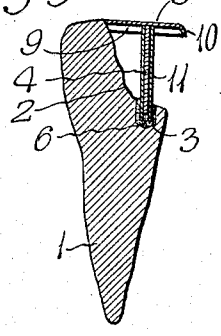


Fig. 8.

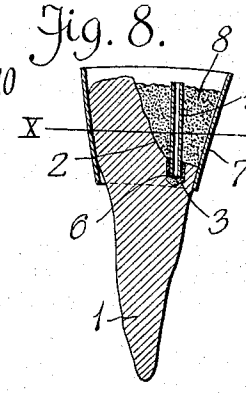


Fig. 9.

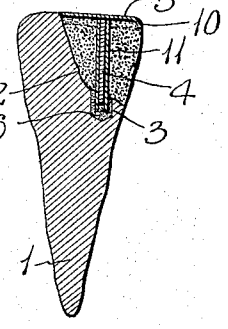


Fig. 11.

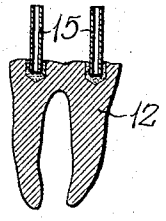


Fig. 12.

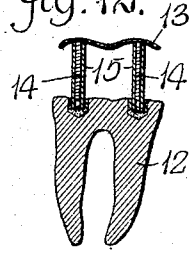


Fig. 13.

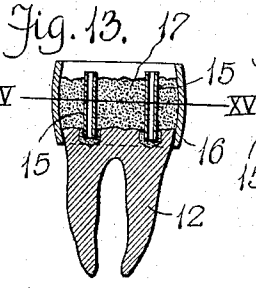


Fig. 14.

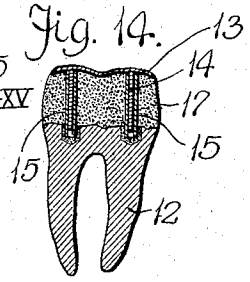
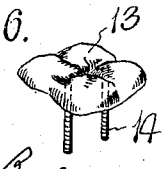


Fig. 16.



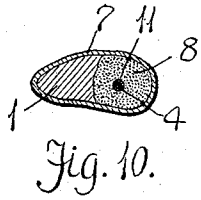


Fig. 10.

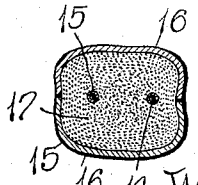


Fig. 15.

Witness

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STRENGTH-REINFORCEMENT FOR TOOTH-FILLINGS.

1,172,486. Specification of Letters Patent. Patented Feb. 22, 1916.

Application filed November 8, 1915. Serial No. 60,175.

To all whom it may concern:

Be it known that I, WILLIAM E. SANBORN, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Strength-Reinforcements for Tooth-Fillings, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a strength reinforcement for tooth fillings or crowns, and the primary object of my invention is to provide a novel cap for a tooth filling whereby the tooth filling is relieved of stresses and strains when pressure is brought to bear upon a tooth repaired in accordance with my invention.

A further object of my invention is to provide a novel cap for a tooth and to connect the same to a tooth in a manner that facilitates filling or building up a tooth, without sacrificing the natural strength thereof, and in a manner that the filling can be properly shaped and finished to make a neat appearance and eliminate cracks or crevices which ordinarily gather food and other matter.

A still further object of my invention is to improve the art of dentistry by a method of filling teeth which facilitates the operations of dentists and increases the longevity of dental work.

The above and other objects are attained by a mechanical construction and method of installing the same as will be hereinafter specifically described and then claimed, and reference will now be had to the drawing, wherein—

Figure 1 is a vertical longitudinal sectional view of the tooth with a ridge piece in position; Fig. 2 is a similar view showing a matrix in position to facilitate filling the tooth; Fig. 3 is a similar view showing the filling completed relative to the cap of the tooth; Fig. 4 is a horizontal sectional view taken on the line IV—IV of Fig. 2; Fig. 5 is a perspective view of a detached cap; Fig. 6 is a vertical longitudinal sectional view of a tooth, showing a positioning sleeve; Fig. 7 is a similar view, showing a cap relative to the sleeve for vertical adjustment; Fig. 8 is a similar view illustrating a matrix in position to facilitate placing a filling in the tooth; Fig. 9 is a similar view illustrating a tooth filled and capped; Fig. 10 is a horizontal sectional view taken on the line X—X of Fig. 8; Figs. 11 to 14 inclusive illustrate a modification of my invention, pertaining to a cap; Fig. 15 is a horizontal sectional view taken on the line XV—XV of Fig. 13, and Fig. 16 is a perspective view of a detached cap.

Reference will first be had to Figs. 1 to 5 inclusive showing a tooth 1 having a portion or cavity 2 thereof to be filled. After this portion or cavity of the tooth is thoroughly cleansed of decayed or injured parts, the bottom of the cavity is drilled or recessed, as at 3, to accommodate the post or pin 4 of a metallic cap 5. The post 4 may be screwthreaded, fluted, serrated or otherwise roughened, whereby it may be frictionally fitted in the recess 3, or a suitable cement 6 may be employed to properly anchor the post 4. After setting the post 4 to hold the cap 5 in proper relation to the upper edge of the tooth 1, a matrix 7 is placed around the tooth whereby a filling 8 can be placed in the cavity thereof. The matrix 7 may be in the form of a strip of celluloid or other material mounted around the tooth and the filling 8 may be cement or any suitable composition used for filling purposes. The matrix 7 permits of the filling being properly positioned and tamped around the post 4 and the roughened surface of the post causes the filling to adhere thereto. In some instances the cavity of the tooth may be undermined or trimmed whereby the filling will become positively anchored relative to the tooth. After the filling has been properly set, the matrix 7 is removed and the filling trimmed and polished at the meeting edges of the filling and the tooth body, also, around the edges of the cap 5. This cap, as best shown in Fig. 5, is of an inverted channel shape with one end thereof open, as at 9, and the opposite end thereof closed, as at 10. The open end of the cap 5 is adapted to overlie the ridge or upper edge of the tooth 1 and the closed end 10 of said cap rounds off the end of the filling as best shown in Fig. 3. The cap is made of gold or a suitable durable metal and since said cap is supported by the post 4 and the upper edge of the tooth body, the filling 8 is relieved of stresses and strains brought to bear upon the cap during the mastication of food.

A modification of my invention is shown in Figs. 6 to 10 inclusive, and this modification simply includes means which will facilitate vertical adjustment by biting on caps

before fillings harden in connection with teeth provided with caps. Instead of mounting the post 4 of a cap in the recess 3 of the tooth 1, I mount a tube or sleeve 11 therein, and before this tube or sleeve is permanently set, I place the post 4 of the cap 5 in the tube, then allow a patient to bring pressure to bear on the cap to force the tube into the recess 3 or cement 6 a desired distance, thus properly setting the cap. The tube 11 having become set, the post of the cap is removed and the matrix 7 placed in position, whereby a filling may be placed around the tube and properly tamped. The cap and its post can then be placed in position and a dentist is thus assured of proper vertical adjustment of the cap relative to a contacting tooth of either jaw. It is therefore apparent that the tube 11 constitutes means for predetermining the vertical adjustment of the cap to be permanently set on a tooth, and as a further instance of such procedure, reference will now be had to Figs. 11 to 16 inclusive. A tooth 12 is shown requiring a complete body and for such teeth it is preferable to use a cap 13 having tooth posts 14. Tubes or sleeves 15 are used in the manner heretofore described for obtaining a temporary adjustment of the cap 13. Then a matrix 16, which may be of one or more parts, is placed on the tooth and the body thereof built up by a suitable filling 17. The cap, 13, which has been illustrated for a bicuspid tooth can then be placed in position and the entire structure properly finished.

Since I have illustrated the installation of one and two cap posts for a tooth, it is apparent that such a post can be used other than illustrated, for instance, where the central portion or body of a tooth remains, it is possible to build up each end of the tooth along the lines suggested by Figs. 1 to 10 inclusive.

While in the drawings there are illustrated the preferred embodiments of my invention, it is to be understood that the construction and method herein involved of repairing a tooth are susceptible to such variations as fall within the scope of the appended claims.

What I claim is:—

1. The combination with a tooth, of a cap, means adapted to detachably support the cap relative to said tooth whereby said cap may be vertically adjusted and a filling adapted to permanently hold said cap relative to said tooth.

2. The combination with a tooth, of a tube carried thereby, a cap having a post mounted in said tube with one end of said cap extending on to said tooth, and a filling adapted to be placed under the opposite end of said cap.

3. The combination with a portion of a tooth, of tubes carried thereby, posts detachably mounted in said tubes, a cap carried by said posts, and a filling adapted to be interposed between said cap and the portion of said tooth.

4. As a new article of manufacture, a channel shaped cap having one end open, the other end closed, and a post protruding from within the channel of the cap.

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

WILLIAM E. SANBORN.

Witnesses:

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KARL H. BUTLER.

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