

H. C. DANCE.
INTERCHANGEABLE FLAT BACK FRONT TOOTH.
APPLICATION FILED NOV. 19, 1912.

1,064,963.

Patented June 17, 1913

Fig. 1.

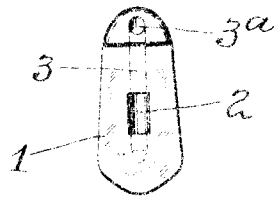


Fig. 2.

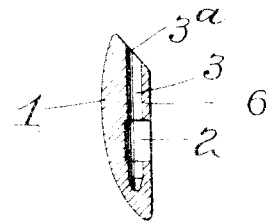


Fig. 7.

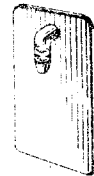


Fig. 3.

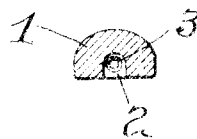


Fig. 4.

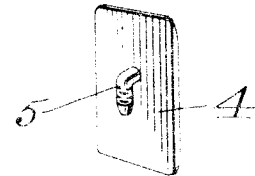


Fig. 8.



Fig. 5.

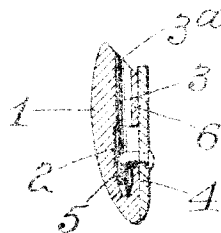
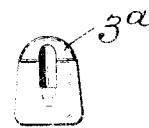


Fig. 6.



Attest:

Chas. F. Johnson
Chas. F. Johnson

Inventor:

Harry C. Dance,
by J. W. Thudde, Attorney

UNITED STATES PATENT OFFICE.

HARRY C. DANCE, OF YORK, PENNSYLVANIA.

INTERCHANGEABLE FLAT-BACK FRONT TOOTH.

1,064,963.

Specification of Letters Patent. Patented June 17, 1913.

Application filed November 19, 1912. Serial No. 732,325.

To all whom it may concern:

Be it known that I, HARRY C. DANCE, citizen of the United States, residing at York, Pennsylvania, have invented certain new and useful Improvements in Interchangeable Flat-Back Front Teeth, of which the following is a specification.

The invention relates to flat back interchangeable front teeth, and the fastening therefor, some of the objects being to enable the dentist to readily adjust the teeth to the requirements of the patient's mouth; to provide a construction which will take care of the surplus cement; also a construction which will effectually resist strain in attaching the teeth and strains incident to actual use in the mouth, and which will permit grinding without danger of chipping the tooth.

The invention consists in the features and combination and arrangement of parts hereinafter described and particularly pointed out in the claims.

In the drawings Figure 1 is a rear view of a tooth according to one form of my invention; Fig. 2 is a longitudinal sectional view; Fig. 3 is a cross sectional view; Fig. 4 is a view of the backing plate in perspective; Fig. 5 is a sectional view of the tooth in place; Fig. 6 is a view of a modified form of facing. Fig. 7 is a view of a plate with its pin located higher up than in Fig. 4. Fig. 8 is a view similar to Fig. 6 showing a slightly different relation as to proportion between the bore and the recess.

In these drawings, 1 is the tooth, it being understood that my improvement relates particularly to front interchangeable teeth. This tooth has a flat back adapted to fit the vertical face of the backing plate shown in Fig. 4. This tooth is molded with a recess 2 in its flat face intermediate its upper and lower ends, and the tooth is provided with a bore or longitudinal cavity 3 extending from the ridge lap past the intermediate recess to about one-eighth inch of the cutting edge of the tooth, this bore or channel terminating at a point below the lower edge of the recess. The recess is wider than the diameter of the bore and preferably deeper, as shown in the cross

sectional view, Fig. 3. The bore or channel opens out at the face of the lap end of the tooth. The backing plate 4 is provided with an attaching pin 5 extending out at substantially a right angle to the face of the plate, and then downwardly substantially parallel with the said face. The length of this latter portion of the pin is such that its end will find a bearing at the bottom of the bore in the tooth, while at the same time the shank of the pin or that portion which extends at right angles to the back plate affords a bearing for the tooth, the lower edge of its recess 2 engaging this shank portion and resisting upward strains, either in adjusting the tooth to the plate or when the tooth is in actual use. In other words, this strain is distributed by the tooth bearing upon both the end of the pin and upon its shank. Now, when it is desired to adjust the tooth higher up on the backing to compensate for shrinkage of the gums, the end of the pin can be cut away and the lower edge of the recess will also be cut away sufficiently to allow the tooth to be pushed higher up on the plate. In this new position, however, the tooth will bear on the pin at the two points mentioned, i. e., on the shank and on the end of the pin to distribute the strain of the upward thrust in biting or in fixing the tooth to the plate. The pin fits the bore 3 with nicety. It is, however, of a diameter smaller than the width of the recess, facilitating its ready insertion to aline with the bore by a movement of the tooth in a direction at right angles to the face of the backing plate, and because of the extra width of the recess in respect to the diameter of the pin, provision is thus made for taking care of any surplus cement which is squeezed out from the bore which the end of the pin enters for this surplus can fill the recess and can contact with the backing plate to cement or lock the tooth thereto. Surplus cement will also be taken care of by the bore extending from the recess and opening at the lap face 8, the cement entering or passing along this bore and exuding at the lap face. It will be noticed that there is a considerable thickness of porcelain under the end of the

pin, and also in rear of the pin bridging the bore, all of which tends to strengthen the tooth at this point. Furthermore, the pin is tapered at its end, the bore being tapered to correspond, and by reason of this there will be more porcelain left between the bore and the labial face of the tooth than would be the case were the pin not tapered. This increases the strength of the tooth and enables the tooth to be ground on its labial face without danger of splitting, and without making the wall so thin as to make the pin show through. The strength of the tooth is preserved also by the portion at 6 bridging the bore of the tooth at a point above the recess.

In practice the recess is first filled with cement, and the tooth or facing is then slipped onto the pin and pushed up, the end of the pin bottoming at the base of the bore or opening, and the edge of the tooth at the lower end of the recess coming against the shank of the pin. A larger amount of cement can be used, the dentist not having to exercise the same care as in practice heretofore because the excess cement will be taken care of as above described. All holes in facings or teeth are to be the same distance from the cutting edge, and all pins are to be the same size and length for all sizes of facings, and the adjustment of the facing upwardly toward the gingival arch is to be effected by grinding the end of the pin and the lower edge of the recess, this enabling the facing to be pushed up along the face of the backing while at the same time maintaining a firm bearing thereon throughout the entire flat back face.

In the form of the invention illustrated in Fig. 6, the facing is shorter than that shown in the other figures. It is used, however, with the same form of back plate, and substantially right angular attaching pin, the main difference being that there is no bridge piece 6 above the recess, but this recess extends clear through to the lap face 3^a of the facing. This recess lies above the shank of the pin when this is in place, affording an escape for the excess cement and permitting the body of cement in the recess and bore to unite with the backing plate for affixing the facing thereto, it not being necessary with my construction to have any cement between the flat back face of the tooth and the face of the backing plate, which is objectionable to many dentists. This tooth can be adjusted like the tooth first described, and in all adjustments it provides an escape above the pin and through the lap face for the escape of the cement.

I corrugate the pin to present a surface to be engaged by the cement.

It will be observed that the bore which receives the pin is entirely surrounded with

porcelain, thus removing the possibility of the facing being split under the strain incident to the upward pressure. The enlarged recess directs the pin to the bore and the bore centers the facing accurately.

It will be observed that the tooth can be adjusted upwardly and always maintain its firm bearing on the backing plate, and exactly the same relation to the pin so far as the holding function of this pin is concerned. The bore in which the pin accurately fits is not altered by this adjustment, and therefore the accurate fitting of the pin and the accurate centering of the tooth or facing is not interfered with. The adjustment of the facing takes place in a direction parallel with the bore or drilled opening, and thus it is necessary only to cut off the end of the pin and cut away the edge at the lower end of the recess at the back of the tooth in order to enable this adjustment to be made.

Having thus described my invention what I claim is:—

1. In combination a flat back front tooth having a longitudinal bore extending from near the cutting edge through to the ridge lap, and substantially parallel with the flat back face, and an enlarged recess lying above the lower end of the bore extending from the back face and communicating with the bore, a backing plate and a pin of substantially right angular form, the down-turned end of which is substantially parallel with the face of the backing plate, said pin resting at its end in the bottom of the bore and bearing with its shank on the lower edge of the recess, a portion of the recess and of the bore lying above the shank of the pin when said pin is inserted, substantially as described.

2. A flat back front tooth having a bore extending parallel with the flat back and having a recess communicating therewith and opening at the back at a point above the lower end of the bore, the width of said back opening being greater than the diameter of the bore, substantially as described.

3. A flat back front tooth having a bore extending parallel with the flat back and having a recess communicating therewith and opening at the back at a point above the lower end of the bore, the said bore extending to and opening at the ridge lap, the said recess terminating at a point below the ridge lap leaving a portion of the porcelain bridging the bore, the length of said recess vertically being greater than the distance from the bottom of the bore to the lower edge of the recess, substantially as described.

4. In combination a flat back front tooth having a longitudinal bore with a recess communicating therewith at an intermediate point of said bore, leaving bridging portions of the porcelain above and below the recess, said bore extending parallel with the

back flat face and opening through the ridge
lap, and a backing plate having a right an-
gular pin to pass through said intermediate
recess and enter said bore, said pin having
5 its depending portion parallel substantially
with the front face of the backing plate, sub-
stantially as described.

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

HARRY C. DANCE.

Witnesses:

EDWIN MOUNTFORD,
EDWARD J. LOUCKS.