Feb. 1, 1955 S. J. INFANTE 2,700,822

ARTIFICIAL TOOTH STRUCTURE

Filed Aug. 26, 1952

Fig. 1.

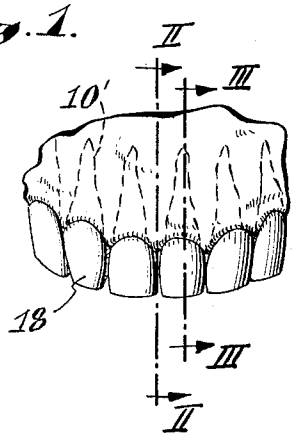


Fig. 2.

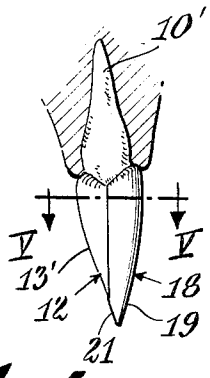


Fig. 3.

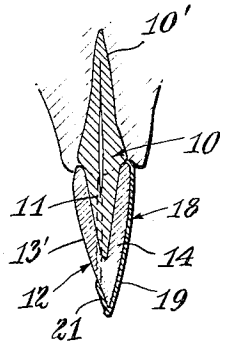


Fig. 4.

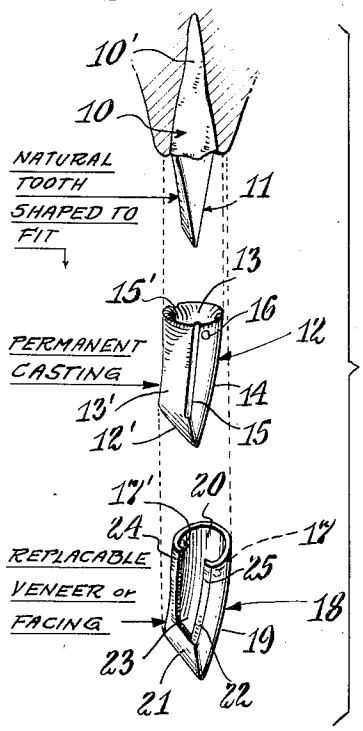


Fig. 5.

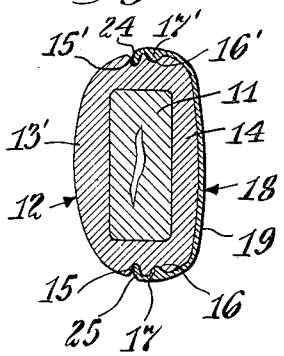
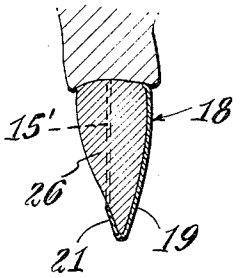


Fig. 8.



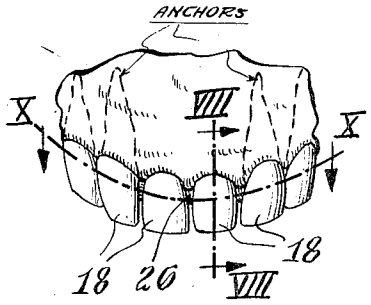


Fig. 6.

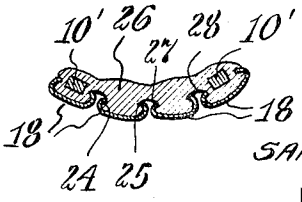


Fig. 7.

INVENTOR
SAMUEL INFANTE.
BY J. W. Newhouse
ATTORNEY

United States Patent Office 2,700,822 Patented Feb. 1, 1955

2,700,822

ARTIFICIAL TOOTH STRUCTURE

Samuel J. Infante, Bloomfield, N. J.

Application August 26, 1952, Serial No. 306,433

7 Claims. (Cl. 32—12)

The present invention relates to improvements in the art of dentistry and relates more particularly to the replacement of facings or veneers which serve as artificial teeth.

As is well known, in the dental art, it has been the practice to provide bridgework or other dental structures with labial facings of suitable material simulating teeth. Such facings in accordance with the general practice are replicas of natural teeth and are of course permanently fixed in the mouth. It often happens, however, that by accident a facing may be broken or chipped or for other reasons may need replacement. Following the current practice it becomes necessary to remove the bridge or other structure since the removal and replacement of a facing, heretofore required that the work be performed in the laboratory of the dental technician.

In accordance with the present invention a bridge or prepared tooth crown may be so constructed and arranged that the removal and replacement of a facing can be accomplished without removal of the bridge or the casting secured to the crown of a natural tooth.

It is an object of the present invention to provide a dental structure wherein veneers or facings may be readily removed and replaced.

Another object of the invention is to provide dental facings so formed as to cooperate with means associated with a bridge or prepared tooth as to align a replaced facing so as to occupy the position of the removed facing.

Other objects and advantages of the invention will be more fully understood by reference to the following description together with the accompanying drawing, in which

Fig. 1 is a front view of a plurality of teeth provided with facings in accordance with the present invention;

Fig. 2 is a view taken on line II—II in Fig. 1;

Fig. 3 is a view taken on line III—III in Fig. 1;

Fig. 4 is an exploded view of the several component elements employed to provide a removable and replaceable facing;

Fig. 5 is a view taken on line V—V in Fig. 2;

Fig. 6 is a front view of a plurality of teeth supported by a bridge construction and having replaceable facings;

Fig. 7 is a fragmentary transverse cross section of a part of the bridge work shown in Fig. 6 viewed in the direction indicated by arrows X, and

Fig. 8 is a view taken on line VIII—VIII in Fig. 6.

As shown in the drawing (see Fig. 4) a tooth **10** having root **10'** in its natural position in the gum, has the crown **11** thereof shaped to enter a hollow casting **12** for nested relation therewith. The casting **12**, which may be termed a retainer element, is open at end **13** for the entrance of the shaped crown **11**. The other end of casting **12** is closed by distal surface **12'** and bounded by lingual wall **13'** and labial wall **14**. At opposite sides of wall **13'** are provided longitudinal grooves **15** and **15'** extending from distal surface or wall **12'** to the perimeter of the opening **13** and with notches or depressions **16** and **16'**.

From the above it will be evident that although the cap or casting **12** follows the present practice to provide a base to receive and support a veneer or facing, it has been modified to receive and retain a facing so constructed as to cooperate with the casting for locking the two parts in predetermined relation.

As shown, a facing or veneer is provided in the form of a hollow shell **18** having a labial wall **19** conforming to the wall **14** of casting **12**. The said wall **19** extends between open end **20** of shell **18** and distal wall **21**. A lingual wall **22** is provided with a slot **23** extending from wall **21** to open end **20** of the shell **18**. Edges **24** and **25** of slot **23** are inturned and forming guide ridges spaced apart a distance equal to the distance between grooves **15** and **15'** of the casting **12**. Bosses or protuberances **17** and **17'** also extend from the inner surface of shell **18**.

In practice the casting is positioned over the natural tooth crown in accordance with well known procedure. The casting thus serves as a base on which to secure the facing **18** which is moved over the casting to cause the edges **24** and **25** to be disposed in grooves **15** and **15'** and bosses **17** and **17'** to enter notches **16** and **16'**. The cooperation between the facing edges and the grooves and the bosses and notches serves to align, locate and lock the facing in predetermined relation to the casting and in correct position relative to adjacent teeth. The facing is secured by any suitable method as by cement.

As above described a facing may readily be removed or attached to a natural tooth and the same is true with respect to a bridge supported facing.

In bridge constructions where the bridge plate supports a facing the bridge plate is provided with an extension **26** to receive the facing shell **18**. The extension **26**, which serves the same purpose as casting **12**, is also provided with grooves **27** and **28** (see Fig. 7) to receive the edges **24** and **25** of a facing **18**. It will be evident that in the case of bridge supported facings the removal and replacement is accomplished, as above described, without the necessity of removing the bridge. As will be evident the extension **26** may be provided with depressions to receive bosses of a facing **18** to lock the facing against relative endwise movement.

Obviously the facing or veneer may be of any well known material such as a plastic, porcelain or the like. If, in the case of a facing secured as above set forth, it becomes desirable to remove a facing, it may readily be broken away from the casting without removing casting from the tooth or removing the bridge. The casting or retainer element is then ready to receive a new facing which may be moved to slide the edges **24** and **25** along guide grooves **15** and **15'** and locked in its proper position by the bosses **16** and **16'** entering notches **17** and **17'** to its proper position and secured by cement.

It will be readily understood that when a facing is removed and a new facing desired an impression may be taken of the casting **12** whereby a new facing or veneer may be formed with the guide ridges **24** and **25** and bosses **17** and **17'**. Thus when the new facing has been formed it may conveniently be applied to the casting **12** and take the original position of the removed facing. The guide ridges and slots cooperate with the bosses and notches which latter control the location of the facing endwise of the casting. The veneer or facing is fixed in position by a suitable cement.

The entire operation of removing and replacing a facing may be performed without the removal of the bridge from the mouth or the casting from a tooth thereby avoiding the discomfort and inconvenience to a patient.

Although a preferred embodiment of the invention is shown and described herein it is to be understood that modifications may be made therein without departing from the spirit and scope of the invention as set forth in the appended claims.

I claim:

1. An artificial tooth structure including a casting, said casting having labial, lingual and distal surfaces, said lingual surface having a longitudinal groove, a shell formed to receive said casting in nested relation thereto and a longitudinal guide ridge integral with said shell for engaging said groove to align said shell relative to said casting.

2. An artificial tooth structure including a casting, said casting having labial, lingual and distal surfaces, said lingual surface having longitudinal grooves at opposite sides thereof, a shell having a lingual wall, said lingual wall having a slot said slot having longitudinal edges for

engaging said grooves to align said shell relative to said casting.

3. An artificial tooth structure including a casting, said casting having labial, lingual and distal surfaces, said lingual surface having grooves disposed in parallel relation extending from said distal surface to the opposite end of said casting, a shell having labial, lingual and distal walls, said lingual wall having a slot extending longitudinally of said lingual wall and provided with inturned edges for disposition in said grooves to align said shell relative to said casting.

4. An artificial tooth structure including a casting, said casting having labial, lingual and distal surfaces, said lingual surface having oppositely disposed longitudinal grooves, a shell having labial, lingual and distal walls, said lingual wall having a slot provided with inturned edges to provide longitudinal guide ridges for disposition in said grooves to align said shell relative to said casting and means on said casting and said shell cooperating to retain said casting and shell against relative endwise movement.

5. An artificial tooth structure comprising a hollow retainer element having lingual, labial and distal walls to receive a tooth portion, said retainer element having longitudinal grooves at opposite sides of said lingual wall, a facing having lingual, labial and distal walls, said lingual wall of said facing having a slot providing longitudinal guide ridges for disposition in said grooves to align said retainer element and facing during relative movement into nested relation.

6. An artificial tooth structure comprising a hollow retainer element having lingual, labial and distal walls to receive a tooth portion, said retainer element having longitudinal grooves at opposite sides of said lingual wall, a facing having lingual, labial and distal walls, said lingual wall of said facing having a slot providing longitudinal guide ridges for disposition in said grooves to align said retainer element and facing during relative movement into nested relation and means on said retainer element cooperating with means on said facing to hold said retainer and facing against relative endwise movement.

7. An artificial tooth structure comprising a hollow retainer element having lingual, labial and distal walls to receive a tooth portion, said retainer element having longitudinal grooves at opposite sides of said lingual wall, a facing having lingual, labial and distal walls, said lingual wall of said facing having a slot providing longitudinal guide ridges for disposition in said grooves to align said retainer element and facing during relative movement into nested relation and retained element having a depression and a boss integral with said facing cooperating with said depression to hold said retainer and facing against relative endwise movement.

References Cited in the file of this patent

UNITED STATES PATENTS

897,518	Bloom	Sept. 1, 1908
2,146,064	George	Feb. 7, 1939

OTHER REFERENCES

"Por-Cast Veneer," Dental Survey, March 1935, page 8.