Jan. 7, 1930. W. M. FLOYD 1,742,310

ARTIFICIAL TOOTH STRUCTURE

Filed March 24, 1927

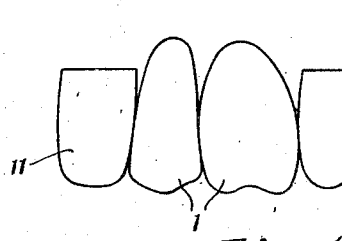


Fig. 1.

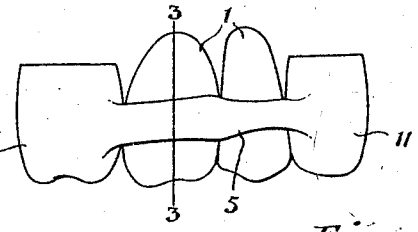


Fig. 2.

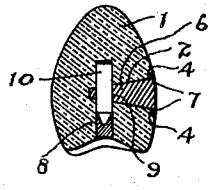


Fig. 3.

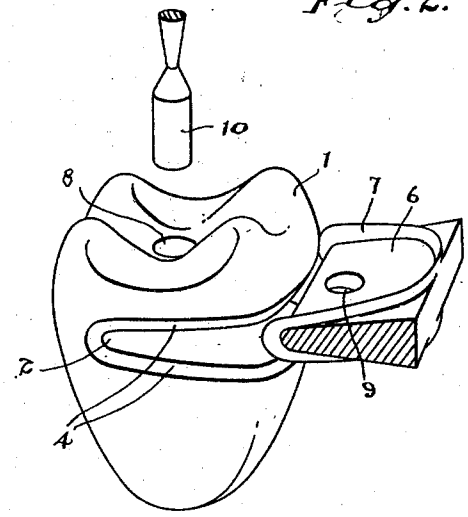


Fig. 5.

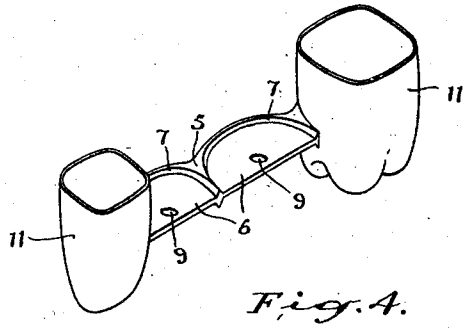


Fig. 4.

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UNITED STATES PATENT OFFICE

WILLIAM M. FLOYD, OF TORONTO, ONTARIO, CANADA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO IDEAL TOOTH, INC., OF CAMBRIDGE, MASSACHUSETTS, A CORPORATION

ARTIFICIAL-TOOTH STRUCTURE

Application filed March 24, 1927. Serial No. 178,046.

The principal objects of the invention are to provide an extremely strong form of porcelain tooth which will enable the use of a very rigid bridge structure and which will simplify the mechanical work in the making of the bridge.

A further important object is to provide a form of tooth which will be very sanitary enabling the user to thoroughly cleanse the gums around the teeth.

The principal features of the invention consist in the novel construction and arrangement of a solid porcelain tooth with a transverse slot opening to the back thereof, and a rigid metal bar fitting snugly in said slot and secured by a pin fitted in a hole bored axially of the tooth.

In the drawings, Figure 1 is a front elevational view of a bridge structure constructed in accord with this invention.

Figure 2 is an elevational view of the back of the structure shown in Figure 1.

Figure 3 is a vertical section through the line 3—3 of Figure 2.

Figure 4 is a perspective detail of the metal bridge structure shown in Figure 2, the porcelain teeth being removed.

Figure 5 is an enlarged perspective view of a tooth showing the metal bridge structure and the fastening pin ready to be assembled.

In the construction of tooth herein shown, the tooth 1 is formed of a solid block of porcelain moulded to the exact shape of the natural tooth with a suitably shaped top adapted to fit into the hollow in the gum from which the natural tooth has been extracted or to fit snugly against the gum surface.

The body of the tooth is cut transversely by a slot 2 arranged a desirable distance above the cusps. This slot extends inwardly from the back of the tooth well past the centre and it is tapered inwardly from the back to a rounded apex 3. The edges 4 of the slot are beveled outwardly.

The bridge structure is formed of a bar 5 of metal cast with wedge-shaped portions 6 having the flat surfaces thereof tapered to fit snugly into the slot 2 of each tooth and a flaring beveled rim 7 extends outwardly from the beveled surfaces to correspond with the surface contour of the tooth and to fit snugly against the beveled edges 4 of the slot.

The tooth is bored centrally on its longitudinal axis and the hole 8 intersects the slot 2 back of its apex.

The bridge bar 5 is bored with a hole 9 which registers with the hole 8 in the tooth.

When the tooth has been placed on the bridge structure, being suitably cemented, a pin 10 is inserted into the hole, being bedded in cement, and passing through the hole 9 said pin locks the tooth securely on the bridge structure. After the pin has been inserted it is severed below the cusp surface and the hole is filled in with cement. This filling being on the working surface of the tooth is effectively hidden.

The bridge bar 5 is provided with suitable means for securing same to adjacent teeth, such as inlays or as here shown with crowns 11.

A bridge structure constructed as described permits the use of a very heavy bridge bar which will stand very heavy pressure without distortion and the flange rims 7 which extend back of the teeth further stiffen same.

The teeth being of a solid block of porcelain are very strong and the bridge bar is incorporated thereinto in a very solid manner.

It will be readily understood that in a bridge structure such as described the metal supporting bar will be well away from the gums and the upper ends of the teeth may be fitted to the gums in a natural position so that there will be openings above the bridge bar which will enable the thorough cleansing of the teeth around the gums. In such a structure the metal is completely hidden from outside and the teeth will appear perfectly natural.

What I claim as my invention is:

1. An artificial tooth structure, comprising a solid procelain tooth having a horizontally disposed slot extending transversely from side to side, said slot opening from the back and extending forwardly beyond the vertical axis of the tooth, a rigid metal bridge bar extending transversely of the tooth and bedded in said slot, and a pin arranged in said tooth in vertical axial relation thereto and

extending transversely through said slot and bar.

2. An artificial tooth structure, comprising a solid porcelain tooth having a transverse slot extending from side to side the opposing walls of which converge inwardly from the back, said opposed convergent walls having a continuous beveled edge and a metal bridge bar having convergent surfaces extending across said tooth through the slot and having flaring rims extending beyond the convergent surfaces and fitting against said continuous bevelled edge and conforming to the contour of the tooth.

3. An artificial tooth structure, comprising a solid porcelain tooth having a tapered transverse slot extending from side to side and a hole extending longitudinally of the vertical axis of the tooth and intersecting the slot, a rigid tapered metal bar arranged transversely of the tooth and fitted in said slot and having a hole therethrough registering with the axial hole in the tooth, and a fastening pin passing through said aligned holes and bedded in the tooth and securing the tooth to the bar with the tapered part of the latter in rigid association with the convergent walls of said slot.

4. An artificial tooth structure, comprising a metal bar having horizontal wedge-shaped portions tapering from a flanged back, porcelain teeth each having a horizontal wedge-shaped slot extending inwardly from the back thereof and extending transversely from side to side of the tooth, and fastening pins extending longitudinally of the vertical axes of the teeth and extending through the wedge-shaped portions of said bar.

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