

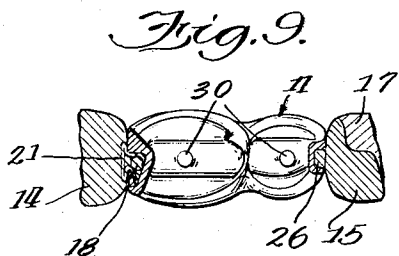
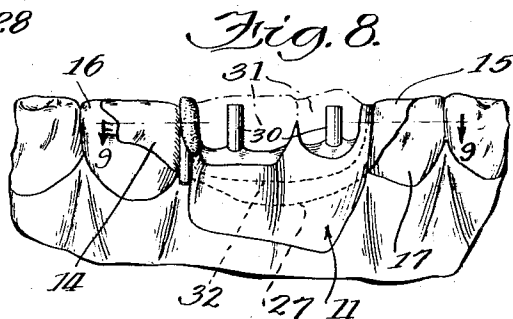
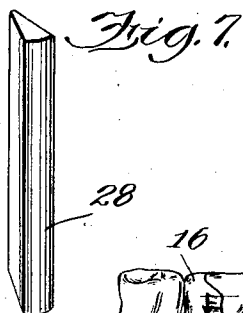
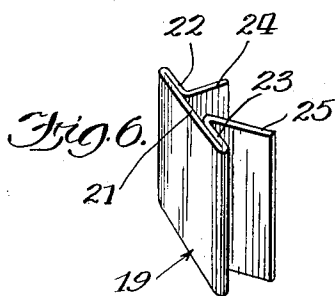
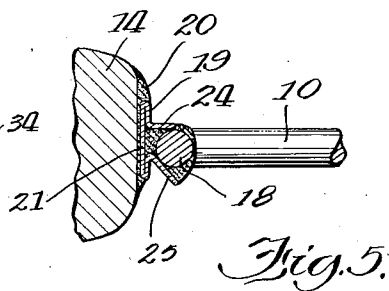
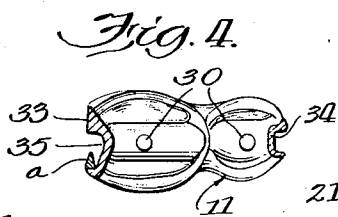
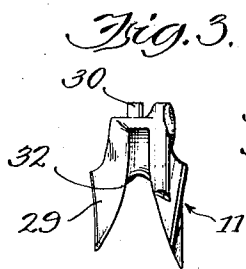
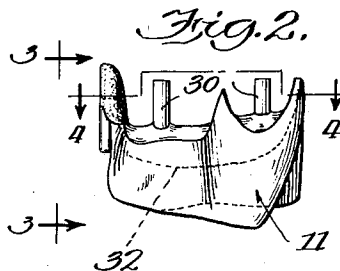
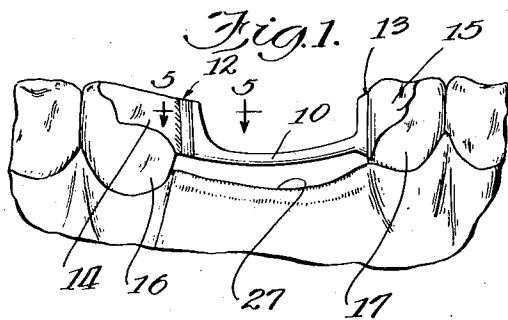
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C. W. JACKMAN

1,937,345

DENTAL BRIDGE

Filed Dec. 14, 1931



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# UNITED STATES PATENT OFFICE

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## DENTAL BRIDGE

Clarence W. Jackman, Oak Park, Ill.

Application December 14, 1931. Serial No. 580,957

6 Claims. (Cl. 32—12)

My invention relates to a dental bridge, which includes artificial teeth replacing extracted teeth.

One of the objects of the invention is to provide an improved bridgework including a removable denture and a fixed support therefor.

A further object of the invention is to provide an improved fixed supporting member or bar for the support of such a denture.

A further object of the invention is to provide an improved denture which can readily be adjusted to co-operate with said fixed supporting member.

Other objects, advantages and capabilities of the invention appear from the following description of a preferred embodiment thereof, taken in conjunction with the accompanying drawing, in which,

Figure 1 is an elevational detail showing a fixed bar installed in a gap between teeth;

Fig. 2 is an elevational view of a denture adapted to co-operate with the fixed bar, before the artificial teeth are applied thereto;

Fig. 3 is an end elevational view of said denture taken on the line 3—3 of Fig. 2;

Fig. 4 is a sectional plan view, the section being taken on the line 4—4 of Fig. 2;

Fig. 5 is a sectional detail, taken on the line 5—5 of Fig. 1, on a somewhat larger scale;

Fig. 6 is a perspective view of a clip employed in constructing the fixed bar;

Fig. 7 is a perspective view of a pin which is assembled into the denture;

Fig. 8 is an elevational view, similar to Fig. 1, showing the denture in position, and

Fig. 9 is a sectional plan taken on the line 9—9 of Fig. 8.

Referring to the drawing, the numeral 10 designates the fixed bar and numeral 11 designates the removable bridge or denture. The fixed bar 10 may suitably be formed from a relatively stout wire or rod of gold or other suitable metal. I prefer to employ a drawn wire of clasp metal. The ends of the bar 10 are secured into abutments 12 and 13 which may comprise inlays 14 and 15 which are cemented into solid teeth 16 and 17 in the patient's mouth, these being the teeth on each side of the gap which is to be bridged, this gap resulting from the extraction of teeth.

The abutment 12 comprises in addition to the inlay 14, or other dental construction used to replace all or a portion of the crown of a tooth, the upturned end 18 of the bar 10, the clip 19 and solder 20, by means of which these elements are secured together. The clip 19 comprises a central portion 21 and the portions 22 and 23

contiguous thereto are bent inwardly into contact with the central portion 21. The marginal portions 24 and 25 are bent inwardly to provide flanges that extend away from the main portion 21 of the clip, the flange 24 being substantially at right angles to the portion 22 and the flange 25 extending away therefrom so as to facilitate production of the dovetailed abutment shown clearly in Figs. 5 and 9. As will readily be understood from Fig. 5 the clip 19 is soldered to the inlay 14 and the upturned end 18 of the bar 10 is inserted in the channel formed between the flanges 24 and 25. This channel is then filled with solder which encloses the upturned end 18. The outer surfaces of the flanges 24 and 25 and the adjacent portions 22 and 23 of the clip 19 are left unchanged so that smooth sliding surfaces are provided for engagement with the corresponding portion of the denture 11.

The other abutment 13 comprises the inlay 15, or other dental construction to replace all or a part of the crown of a tooth, and the upturned end 26 of the bar 10. The upturned end 26 is soldered to the inlay 15 and is shaped into substantially rectangular form to provide a vertical rib which is adapted to engage with a complementary recess in the corresponding end of the denture 11.

As will be seen from Fig. 1 the bar 10 is located substantially above the gingival or gum line so that no opportunity is provided for the collection of food, the space between the bar 10 and the gingival being sufficient to permit thorough cleaning by means of a tooth brush. The complete fixed bar can, of course, be highly polished and finished with rounded surfaces so that it may be highly sanitary. No sharp pockets are provided with the exception of the angle between the portion 23 and the flange 25 of the clip 19. It is to be noted, however, that this pocket can be cleaned effectively by a tooth brush and it is automatically cleaned by the pin 28 carried by the denture 11, which pin conforms to this angular formation.

The bar 10 is preferably made of sufficient strength to maintain the teeth 16 and 17 in their original positions. Normally when teeth are extracted, the adjacent teeth lean over into the gap. As a consequence the natural bite is disturbed since these teeth move out of their natural alignment or register with the teeth of the other jaw. The fixed bridge may be fitted shortly after the extraction operation so that the original position of the teeth 16 and 17 is maintained. In addition to the fixed spacing effect, the bar 10 is capable

of resisting torsion so that these teeth are prevented from tilting outwardly or inwardly from their initial position.

The denture 11 may comprise a base 29 of any suitable material, this base carrying pins 30 upon which artificial teeth 31 are mounted in known manner, said teeth being indicated by dash-and-dotted lines in Fig. 8. The base 29 is substantially bifurcated in form so as to provide depending web portions which project below the gingival on either side of the gum.

The inner surfaces of the web portions extend upwardly into a crotch 32 which is conformed to seat upon the bar 10. The denture 11 is provided with end members 33 and 34 which are adapted to engage the abutments 12 and 13. These end members are preferably formed of gold or other dental metal. The end member 33 is provided with a recess 35 which is conformed to engage the outer face of the flange 24 and the contiguous inner face of the composite dovetail member. At the appropriate side, the end member 33 has soldered or otherwise secured thereto the pin 28 which is adapted to enter the recess between the portion 23 of the clip 19 and the flange 25. It will readily be seen that by incorporating the pin 28 in the end member 33 the requisite flat surfaces are provided very readily and simply. The bar 28 is substantially longer than the clip 19 so that it normally projects below the clip and its lower end is free and unsecured so that it may be bent slightly in order to adjust the grip of the end member 33 upon the abutment 12. This method of adjustment is very simple and effective. The bar 28 is made of sufficiently hard gold alloy or similar material to retain its shape when bent to the desired position and more or less resiliently and frictionally hold the denture against removal.

The end member 34 is provided with a vertical recess or slot which is of substantially rectangular cross section and is adapted to engage the upturned end of the bar 10 which is secured to the inlay 15.

The denture 11 can readily be removed from the patient's mouth which is then in a condition which permits thorough cleansing. The denture may very simply be replaced and even if it is not worn for a considerable time the position of the teeth 16 and 17 will remain unchanged and it can easily be replaced at any time.

In some cases it may be desirable to use the clip 19 without the fixed bar, as when providing a denture to replace the rearmost molar. In such instances the denture may be connected by a rigid bar or plate with a removable denture on the opposite side of the jaw so as to be held in position thereby and be removable therewith. When the clip is thus used without the bar the space between the flanges 24 and 25 thereof is filled with a suitable gold alloy or solder.

Although the invention has been disclosed in connection with the specific details of the preferred embodiments thereof, it must be understood that such details are not intended to be limitative of the invention except in so far as set forth in the accompanying claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A dental bridge comprising a fixed bar, permanent anchorages at each end thereof adapted to be permanently mounted on teeth on either side of the gap to be bridged, the ends of said bar being turned upwardly within said anchorage to provide projections within said gap, and a removable denture provided with recesses adapted to engage said projections, thereby holding said denture against rocking movement on said bar.

2. In a dental bridge, in combination, a fixed bar permanently secured at each end to tooth inlays, the ends of said bar being turned upwardly and embodied in vertical projections or ribs on the faces of said inlays, said projections being adapted to form abutments for a removable bridge.

3. In a dental bridge, in combination, a fixed bar having an upwardly turned end, a clip having its sides turned inwardly to provide a channel, one of said sides being substantially perpendicular to the body of the clip and the other side being at an acute angle relative to the body, said upwardly turned end of said bar being received in said channel, solder securing said end to said channel, and means securing said clip to a tooth.

4. In a dental bridge, in combination, a tooth inlay, a metal clip secured thereto, said clip having its sides turned inwardly to provide a vertical channel, a fixed bar having an upturned end received in said channel and means integrally securing said upturned end to said clip.

5. In a dental bridge, in combination, a fixed bar having an upwardly turned end, a clip having its sides turned inwardly to provide a flaring channel, said upwardly turned end being received in said channel, solder securing said end to said channel and filling up said channel to provide a rib of dovetail cross section and means for securing said rib to a tooth.

6. A dental bridge comprising a fixed bar, permanent anchorages at each end thereof adapted to be permanently mounted on teeth on either side of the gap to be bridged, the ends of said bar being turned upwardly within said anchorages to provide projections within said gap, and a removable denture provided with recesses adapted to engage said projections, one side of one of said recesses being formed by a downwardly projecting pin having a free end adapted to be deformed to vary the degree of frictional engagement of said denture with one of said anchorages.

CLARENCE W. JACKMAN.