Sept. 2, 1924. 1,507,024

C. I. MONSON

ARTIFICIAL TOOTH

Filed Jan. 16, 1922 2 Sheets-Sheet 1

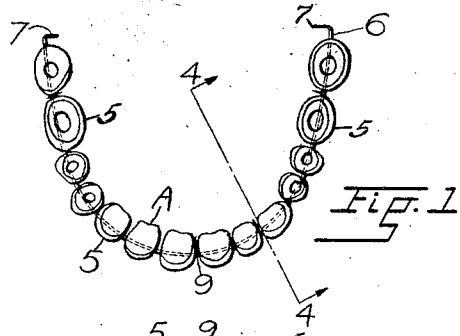


Fig. 1

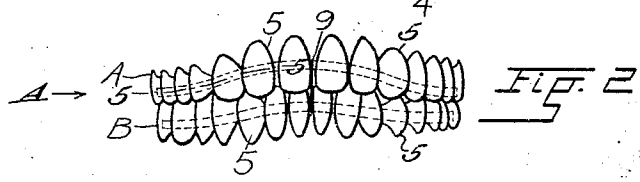


Fig. 2

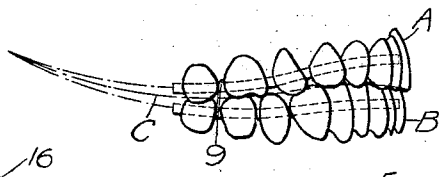


Fig. 3

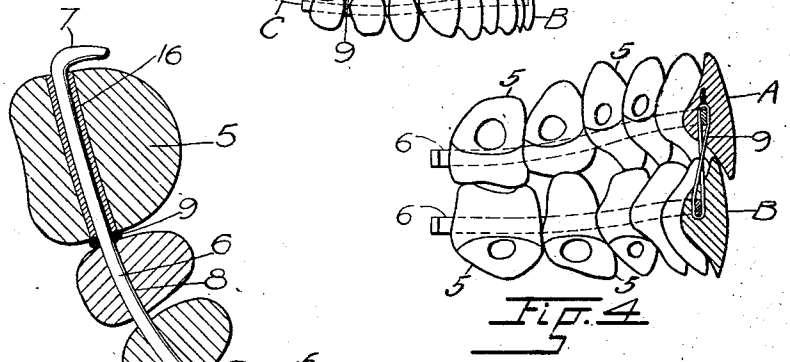


Fig. 4

Fig. 5

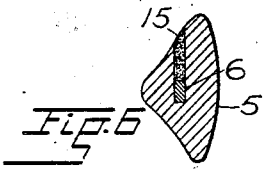


Fig. 6

INVENTOR.
CARLTON I. MONSON

BY

ATTORNEY.

Sept. 2, 1924. 1,507,024

C. I. MONSON

ARTIFICIAL TOOTH

Filed Jan. 16, 1922 2 Sheets-Sheet 2

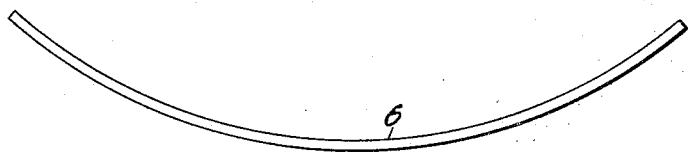


Fig. 7

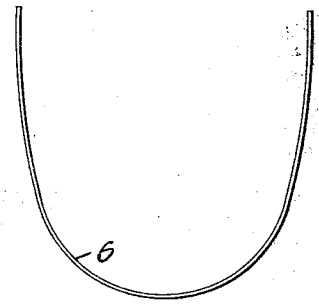


Fig. 8

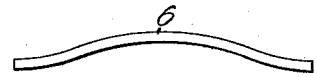


Fig. 9

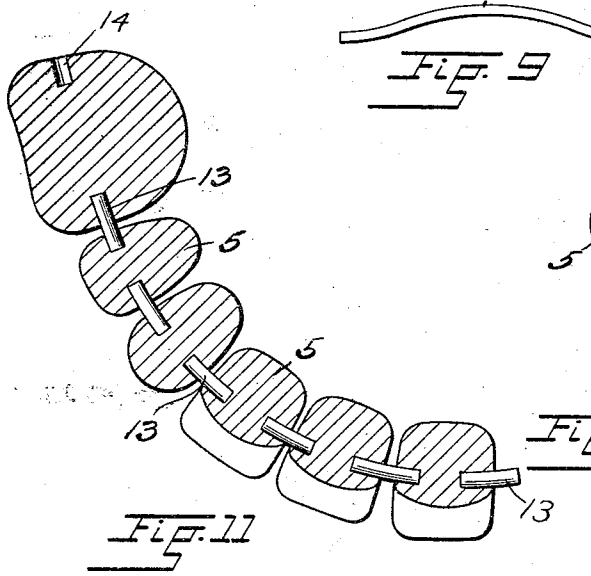


Fig. 11

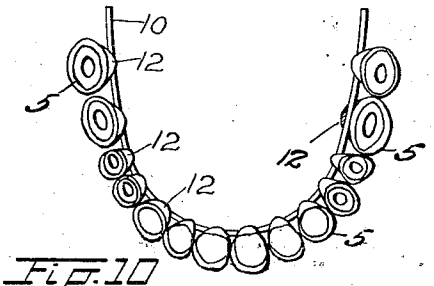


Fig. 10

INVENTOR.
CARLTON I. MONSON

BY

ATTORNEY.

Patented Sept. 2, 1924. 1,507,024

UNITED STATES PATENT OFFICE.

CARLTON I. MONSON, OF DENVER, COLORADO.

ARTIFICIAL TOOTH.

Application filed January 16, 1922. Serial No. 529,611.

To all whom it may concern:

Be it known that I, CARLTON I. MONSON, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Artificial Teeth, of which the following is a specification.

This invention relates to sets of artificial teeth used in prosthetic dentistry and its main object is to provide as a new article of manufacture, a set of artificial teeth for use on dental plates and bridges, which are assembled and held together in an arrangement strictly conforming to the contour of the gum and the compensating curve of the jaw.

It is well known to those versed in the art that in prosthetic dentistry, the most exacting part of the work in making a mouth plate or bridge, is to arrange the artificial teeth in the denture so that they are in perfect anatomical articulation.

This part of the work not only requires skill to be obtained only by long and careful study and experience, but its proper performance takes much time and undivided attention and sets of artificial teeth are mainly for this reason, more expensive than is warranted by the cost of material and the time actually occupied in fitting them to the mouth of the patient.

The use of sets made according to the present invention eliminates the most difficult part of the work above referred to by insuring the proper arrangement of the teeth in each set and perfect anatomical articulation of the dentures without requiring on the part of the dentist or his laboratory assistant, the skill, calculation and measurements heretofore essential.

The object of my invention is attained by stringing the teeth of each set together by means of a holding element which permanently holds them in an arrangement strictly conforming with the contour of the gum and the compensating curve of the jaws.

The holder is preferably made pliable so that its curve may be varied to more exactly conform with the shape of the gum to which the denture is fitted and by tying the upper and lower sets of teeth together they may be jointly fastened on the dental models in perfect anatomical articulation and subsequently separated.

An embodiment of my invention has been illustrated in the accompanying drawings in the several views of which corresponding parts are similarly designated and in which—

Figure 1, is a top view of upper and lower sets of artificial teeth assembled in accordance with my invention;

Figure 2, a front view of the sets shown in Figure 1;

Figure 3, a side view of the same looking in the direction of the arrow A, Figure 2;

Figure 4, a section on the line 4—4, Figure 1, drawn to an exaggerated scale;

Figure 5, a further enlarged section taken on the line 5—5, Figure 2;

Figure 6, a vertical section of a tooth of either set illustrating a method of placing the same in a space of a set already formed;

Figure 7, a development of the element by which the teeth of a set are held together in the prescribed arrangement;

Figure 8, a top view of said element bent in conformity with the contour of the gum;

Figure 9, a front view of the element as it is shown in Figure 8;

Figure 10, a view similar to that of Figure 1, showing a modified method of fastening the teeth to the holding element; and

Figure 11, a section similar to that of Figure 5, drawn to an exaggerated scale, illustrating a modification of the means for fastening the teeth together.

Referring first to Figures 1 to 8 of the drawings which illustrate my invention in its preferred form, the upper and lower sets of artificial teeth 5 have been designated by the letters A and B.

The teeth of each set are strung on a flat band 6 of pliable and non-corrosive metal, the ends of which are bent as at 7 to hold the teeth against relative displacement.

The bands are cut or otherwise formed, as shown in Figure 7, in a curve which conforms with the curved line lying in the

occlusal plane of the teeth and passing through the anterior face of the condyle, commonly known as "the compensating curve" or "curve of Spee" and indicated in Figure 3 of the drawings by the broken line C.

The curved bands thus formed, are subsequently bent to conform with the contour of the gum as shown in Figures 8 and 9.

The teeth 5 have transverse slots 8 to which the bands are fitted and it will be apparent that when the teeth are strung on the band in their regular anatomical order and the bands are bent at their ends to prevent of relative displacement of the teeth, the band and the teeth provide collectively a set of teeth which as an entirety may be fastened on a dental model, and that when both the upper and lower sets are thus applied, correct anatomical articulation is assured.

The upper and lower sets of teeth after having been assembled as hereinabove described, are fastened together in anatomically correct relative positions by means of wire loops 9 which engage the bands at intervals between the teeth and which after the sets have been fastened in the wax plates on the dental models, are broken and removed.

It will be understood that the bands which support the teeth may be of any desired form in cross section, and that their protruding ends instead of being bent to hold the teeth in place, may, for the same purpose, be provided with nuts or knobs of solder or cement.

In Figure 10 of the drawings, the band 10 is placed exteriorly of the teeth which are secured thereto, as at 12, by cement or other suitable means.

In Figure 10, the holding element is made in sections which are placed between the teeth of each set.

The sections are preferably made in the form of pins 13 which are curved for alinement in an imaginary compensating curve and which fit snugly in sockets 14 in the sides of the teeth.

In the use of my invention, the two sets of teeth arranged and fastened together as shown and described, are supplied to the dentists in various sizes, shapes and shades to meet different requirements.

The operator places the sets on the models in a dental articulator, as usual, and after the wax in which they are set, has hardened, the wires which held the sets together, are cut and removed.

Owing to the conformity of the bands on which the teeth are assembled, with the compensating curve and the contour of the gums to which the sets are fitted, the correct position and relative arrangement of the teeth on the models is obtained without individual adjustment and without the measurements, calculations and care ordinarily required.

The pliability of the bands permits of the sets being fitted to gums of irregular form in any given size.

In case but part of the teeth of either set are required, the other teeth are removed from the holders before the sets are fastened in the mouth plates, and in the event of it being necessary to replace one or more of the teeth on account of wear or breakage, the operator cuts through the porcelain or other material of which the teeth are made, to the slot through which the band passes, removes the broken or worn tooth and replaces the same with a tooth which is recessed to fit upon the band.

After the new tooth is positioned on the band between the others, its recess which is open at the upper or lower end thereof, is filled with a vulcanite or other suitable material, as indicated at 15 in Figure 6 of the drawings.

The channeled teeth may be re-inforced by means of a metal bushing which is fitted and baked in the channel through which the metal band passes, as shown at 16 in Figure 5.

Having thus described my invention, what I claim and desire to secure by Letter Patent is:

1. As a new article of manufacture, a set of artificial teeth arranged in correct anatomical order and each having an open-ended hole of non-circular section, and a band of corresponding section passed longitudinally through the holes of the teeth comprised in the set and having retaining members exteriorly of the end teeth of the same, whereby the teeth of the set are held permanently in their relative positions.

2. As a new article of manufacture, a set of artificial teeth arranged in correct anatomical order and each having an open-ended hole of non-circular section, and a pliable band of corresponding section passed longitudinally through the holes of the teeth comprised in the set and having retaining members exteriorly of the end teeth of the same, whereby the teeth of the set are held permanently in their relative positions.

3. As a new article of manufacture, upper and lower sets of artificial teeth, disposed in correct occlusion for anatomical articulation, the teeth of each set being arranged in correct anatomical order and provided with open ended holes of non-circular section, and a band of corresponding section passed through the holes of the teeth of each set and having retaining members exteriorly of the end-teeth of the same, whereby the teeth of the set are permanently held together, the bands of the two sets being detachably fastened together to hold the sets in their above stated relative positions and

to thereby permit the sets being placed conjointly in two articulated mountings to retain their anatomical relation when subsequently separated.

4. As a new article of manufacture, upper and lower sets of artificial teeth adapted to be set in opposed dental mountings, bands tying the teeth of each set together in true anatomical arrangement, and means connecting the two sets in correct occlusion for anatomical articulation.

In testimony whereof I have affixed my signature.

CARLTON I. MONSON.