G. H. SHANNON.

DENTAL MATRIX CLIP.

APPLICATION FILED JUNE 23, 1910.

983,844. Patented Feb. 7, 1911.

Fig. 1.

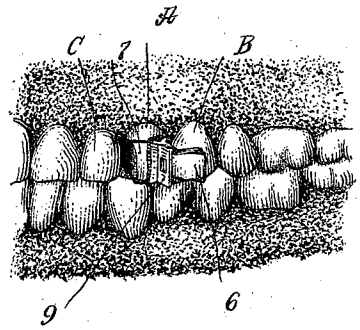


Fig. 2.

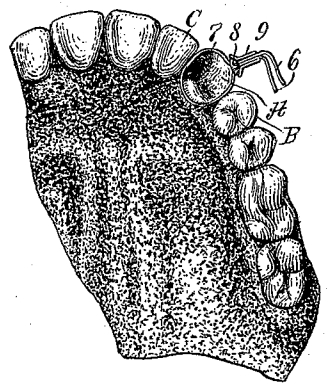


Fig. 3.

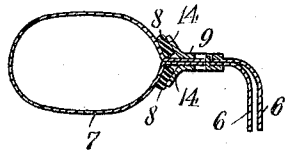


Fig. 4.

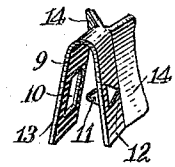
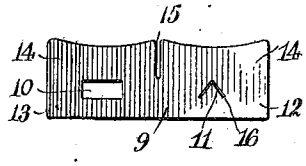


Fig. 5.



WITNESSES:

George Bambay.

E. Mundock

INVENTOR

George H Shannon

BY Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE H. SHANNON, OF CAMBRIDGE, NEW YORK.

DENTAL MATRIX-CLIP.

983,844. Specification of Letters Patent. Patented Feb. 7, 1911.

Application filed June 23, 1910. Serial No. 568,502.

To all whom it may concern:

Be it known that I, GEORGE H. SHANNON, a citizen of the United States, and a resident of Cambridge, in the county of Washington and State of New York, have invented a new and Improved Dental Matrix-Clip, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide a simple and readily applied molding ring for retaining the molding material used in obtaining a cast impression of a tooth cavity, or a plastic filling material, from spreading under the gum and to the adjacent teeth; to provide a simple and efficient clamp for retaining the said ring in operative position; and to provide a simple, economical and efficient fastening device for the said clamp, which will allow of the bite or occlusion of the upper and lower dentures to be taken while the apparatus is in position and without disturbing the same.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a pictorial side view showing a molding ring and holding clamp therefor, arranged and constructed in accordance with the present invention, and as applied in operative position to one of a set of teeth; Fig. 2 is a pictorial view from beneath showing a molding ring and clamping device therefor in operative position upon one of a set of teeth; Fig. 3 is an enlarged view in detail and in cross section, of a molding ring and clamp therefor; Fig. 4 is a detail view in perspective, and on an enlarged scale, of the retainer clamp; and Fig. 5 is a detail view on an enlarged scale, showing the blank from which the retainer clamp shown in Fig. 4 is constructed.

Heretofore the operation of taking a cast for a tooth to be filled or otherwise treated has been attendant with certain disagreeable and distressing complications and difficulties, principal among which is the tendency of the wax usually employed to pass unduly above the neck of the tooth under the gum thereof, and to spread around and between the teeth adjacent to the tooth under treatment. Further, the quantity of wax used has been unnecessarily great in order that the desired amount of the said wax should remain at the point necessary to flow into the cavity or about the tooth under treatment. A further difficulty has arisen from the fact that where rubber bands or other obstructive means have been employed to prevent the invasion of the wax, these means have been obstructive to the dentist. It is to overcome these difficulties that the present invention is designed.

I provide a molding ring formed preferably from a thin strip of celluloid 6 or of metal, which is folded upon itself to form a loop 7. The strip 6 is of sufficient stiffness to be crowded around the tooth A which is under treatment and to include the whole space between the said tooth A and the adjacent teeth B and C. Also, the edges of the loop 7 may be forced gently but firmly upward beneath the gum surrounding the tooth A under treatment. The loop 7 is formed by bending the strip 6 in the shape as shown particularly in Fig. 3 of the drawings, and slipping over the free end thereof a small rubber band 8. The band 8 serves to loosely hold the loop 7 in position on the tooth. When the loop is placed in position and the band 8 has been moved snugly against the pressure of the tooth, the retaining clamp shown in Fig. 4 of the drawings is placed over the free ends of the strip 6 and moved against the rubber band 8.

The clamp is provided with a body portion 9, formed as shown, and bent at the median portion thereof to form two depending sections. One of the said sections is provided with a perforation 10 and the other section is provided with a projection 11. The perforation 10 and projection 11 are so disposed that when the depended sections 12 and 13 are folded upon each other the projection 11 extends through the perforation 10. Disposed on one edge of the sections 12 and 13, and laterally extended therefrom, are flared flanges 14, 14. The flanges 14, 14 are preferably curved in their vertical extensions, as shown in Fig. 4.

The clamp shown in Fig. 4 is constructed from the blank shown in Fig. 5 of the drawings. The clamp is made of any suitable material, such as aluminum or thin tin plate. In the blank the flanges 14, 14 are separated by a die cut 15, and the projection 11 is formed by a die cut 16. The curvature which is imparted to the flanges 14, 14 is preferably formed in the body portion 9 after the die is cut, as seen in Fig. 5.

When the clamp 9 is placed over the strip 6, the operator, holding the clamp between suitable pliers with one hand, while retaining the free ends of the strip itself with the other, gently but firmly forces the sections 12, 13 of the clamp together, thus forcing the projection 11 through the looped ends of the band 6 and into the perforation 10 of the opposite section 13, and clenching the projection 11; thus fixing rigidly the clip 9 to the band 6, and so bringing the flanges 14, 14 against the rubber band 8. The clip 9, rubber band 8, band 6 and the tooth surrounded thereby being now in proper correlation, the operator then pinches the flanges 14, 14 toward each other, thus crowding the rubber band 8 against the matrix band 6, thereby and at the same time drawing the band 6 more or less tightly about the tooth, at will. With the cavity of the tooth under treatment being thus inclosed, the model for the cast may be taken, or a plastic filling be inserted, without the material used for taking the impression or for making the filling passing upward under the gum, or coming into undue contact with the surface of the teeth adjacent to the tooth under treatment, or filling the inter-approximal spaces.

The material forming the strip 6 may be varied at will, it being necessary only that the same shall have a certain amount of stiffness of structure and sufficient yield to permit the material forming the cast to press the same outward until it touches upon the adjacent tooth. When the filling is placed, or the wax model is completed, the ring may be removed by cutting the loop 7 with a knife or other instrument, or by severing the clip with suitable cutting pliers, and then spreading and removing the same from engagement with the strip 6.

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

1. A dental matrix clip, comprising a continuous strip folded to form a surrounding loop retaining ring; a fastening clamp infolding the free ends of said strip adjacent to said loop to prevent the slippage of said free ends; and a resilient cushion interposed between said clamp and said loop to exert a constricting pressure on said loop.

2. A dental matrix clip, comprising a continuous strip folded to form a surrounding loop retaining ring; a fastening clamp infolding the free ends of said strip adjacent to said loop to prevent the slippage of said free ends, said clamp having joined clamping extensions, one of said extensions having a projection arranged to fold upon the other of said extensions in holding relation thereto; and a resilient cushion interposed between said clamp and said loop to exert a constricting pressure on said loop.

3. A dental matrix clip, comprising a continuous strip folded to form a surrounding loop retaining ring; a fastening clamp infolding the free ends of said strip adjacent to said loop to prevent the slippage of said free ends, said clamp having folded extensions united in superimposed relation, said extensions being provided with flared pressure flanges, and one of said extensions having a perforation formed in the body thereof, and the other of said extensions having a projection formed from the body thereof and arranged to extend through and overfold upon the edge of the said perforation in the said other extension to form a retaining device for the said clamp; and a resilient cushion interposed between said clamp and said loop to exert a constricting pressure on said loop.

4. A dental matrix clip, comprising a continuous strip folded to form a surrounding loop retaining ring; a fastening clamp infolding the free ends of said strip adjacent to said loop to prevent the slippage of said free ends, said clamp having folded extensions united in superimposed relation, said extensions being provided with flared pressure flanges, and said flanges being curved in their vertical extension, and one of said extensions having a perforation formed in the body thereof, and the other of said extensions having a projection formed from the body thereof and arranged to extend through and overfold upon the edge of the said perforation in the said other extension to form a retaining device for the said clamp; and a resilient cushion interposed between said clamp and said loop to exert a constricting pressure on said loop.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GEORGE H. SHANNON.

Witnesses:

HARRY C. FASSETT.

ALFRED G. HILL.