No. 796,120. PATENTED AUG. 1, 1905.

T. GREEN.

DENTAL MATRIX.

APPLICATION FILED JUNE 18, 1904.

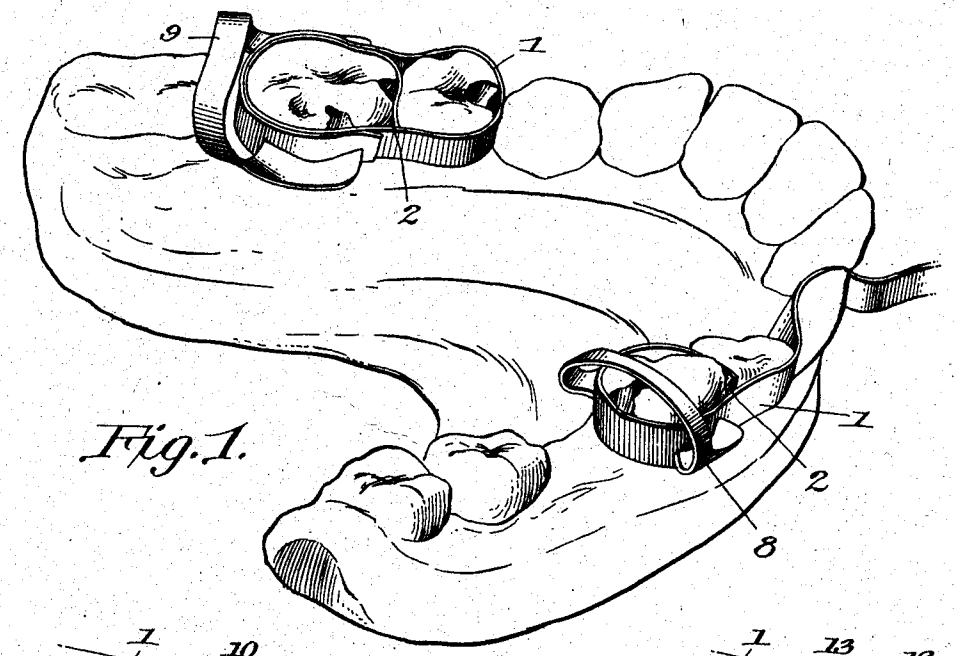


Fig. 1.

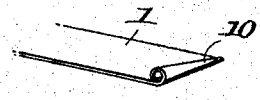


Fig. 6.

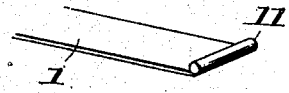


Fig. 7.

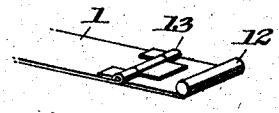


Fig. 8.

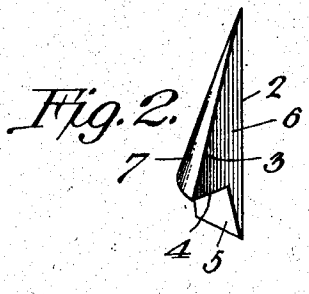


Fig. 2.

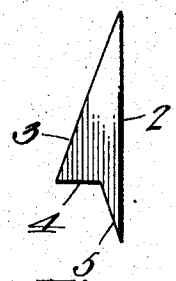


Fig. 3.

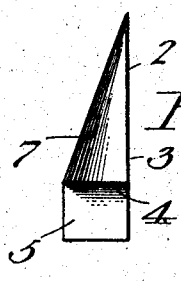


Fig. 4.

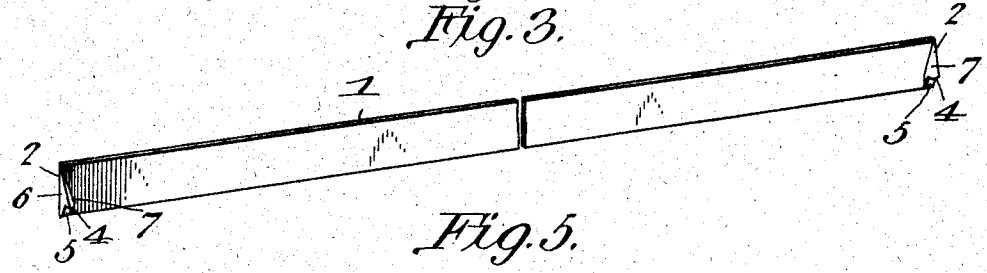


Fig. 5.

Witnesses:

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UNITED STATES PATENT OFFICE.

THEODORE GREEN, OF RIDGWAY, ILLINOIS.

DENTAL MATRIX.

No. 796,120. Specification of Letters Patent. Patented Aug. 1, 1905.

Application filed June 18, 1904. Serial No. 213,149.

To all whom it may concern:

Be it known that I, THEODORE GREEN, a citizen of the United States, residing at Ridgway, in the county of Gallatin and State of Illinois, have invented a new and useful Dental Matrix, of which the following is a specification.

This invention relates to dental matrices.

The objects of the invention are to simplify and cheapen the construction of dental matrices, to increase their usefulness, and to facilitate their application to position; furthermore, by the peculiar construction of the matrix to cause it when *in situ* to occupy a position underneath the free margin down to the attachment of the gums to the teeth, thus to insure the proper building up of the decayed part of the tooth from the gum-line to the crown and at the same time to prevent any spreading of the filling.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a dental matrix, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, there are illustrated four forms of embodiment of the invention, each capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the spirit thereof, and in these drawings—

Figure 1 is a view in perspective of a portion of a human lower jaw, showing two ways in which the matrix may be applied in position. Fig. 2 is a perspective detail view of the stop or lug used in conjunction with the matrix. Fig. 3 is an end view of the stop. Fig. 4 is a side view of the stop. Fig. 5 is a perspective view of a matrix as it appears when ready for use. Fig. 6 is a perspective detail view of a portion of a matrix, exhibiting a modified form of stop or lug. Fig. 7 is a similar view showing another modified form of stop or lug. Fig. 8 is a similar view showing a still further modified form of stop or lug.

Before going into the details of construction of the matrix of the present invention it may be stated that the device is adapted for application to one, two, three, or more teeth, it being shown applied to a single tooth at the right-hand side of Fig. 1 and to two teeth at the left-hand side of the same figure.

Referring to the drawings, 1 designates the matrix, which may be made of any material suited to the purpose, preferably of a steel band or ribbon, as this may be used in connection with amalgam fillings on account of its being impervious to the action of mercury, thus permitting the same matrix to be used repeatedly by simply sterilizing it. The matrix may be made of any length or width found necessary or desirable and may be furnished in standard sizes adapted for application to one, two, or more teeth.

Combined with the matrix at or near the terminals thereof are lugs or abutments 2, which perform in a thoroughly practical and positive manner the dual functions of stops to prevent the matrix being drawn from between the tooth or teeth being operated upon and of means for forcing the matrix downward to cause it closely to impinge the tooth at the gum-line, so that the building up of the tooth with the filling may be rapidly and perfectly effected, spreading of the filling be obviated, and the original shape of the tooth be restored.

As will hereinafter appear, the stops may be made as separate elements and attached to the matrix, as by being brazed thereto, or may form an integral part thereof—that is, be made from the matrix itself—or they may be hinged or swiveled thereto. Furthermore, it may be noted at this point that while the matrix will generally be provided with two lugs, one at each terminal, as shown in Fig. 5, it is to be understood that the invention is not to be limited to this arrangement, as but a single lug of the character hereinafter defined may be employed and still be within the scope of the invention.

The stops 2 (shown in Figs. 2, 3, and 4) may be made of any suitable material and brazed or otherwise secured to the terminals or adjacent to the terminals of the matrix, each stop being a counterpart of the other, so that a description of one will serve for both. The stop exhibited in the figures above referred to is provided with an angular side 3, incut at right angles to its length to present a shoulder 4 and formed beyond or below the shoulder with a wedge-shaped tip 5, which merges into the matrix at or near its lower edge, the terms "lower" and "upper" being employed to designate the positions occupied by the

parts of the stop when *in situ*. The outer side 6 of the stop is flat and is disposed parallel, or approximately so, with the end of the matrix, while the inner face 7 is rounded, thus to cause it to slip over the surface of the tooth when strain is applied to the matrix. The tip 5 subserves the function of carrying the matrix underneath the free margin down to the attachment of the gum to the tooth and of holding it in rigid contact with the tooth at that point.

As shown in Fig. 1, the matrix will be held associated with the tooth or teeth to be filled in two different ways. That shown at the right of Fig. 1 is effected by passing the matrix around the tooth to be filled and then alternately passing or weaving it between the adjacent teeth, thus holding its free end from disconnection, the band encircling the tooth being held positively combined therewith through the medium of a dam-clamp 8. That shown at the left of Fig. 1 is secured by forcing the matrix between the two teeth to be filled and then encircling both teeth with the matrix, and upon draft being applied to the free end of the matrix the rounded inner face 7 of the stop juxtaposed between the two teeth will ride against one of the teeth and force the matrix downward, thereby through the agency of the tip 5 positioning the matrix under the free margin of the gum and bringing it close against the tooth at the root-line, and when the matrix has thus been positioned a dam-clamp 9 is placed thereon, and the procedure of filling the tooth can then be effected. Inasmuch as the matrix extends to the attachment of the gum underneath the free margin of the crown, the building up of a tooth with the filling may be positively and quickly effected, and when the operation is completed the original lines of the tooth are restored.

In the form of embodiment of the invention shown in Fig. 6 the stop 10 is a part of the matrix and is formed by bending or curling a length of the matrix upon itself, preferably in cone shape, and then brazing the plies or turns together. In this form of embodiment of the invention the stop may remain a semicone, as shown, or its outer side may be flattened, as shown in the form of stop used in connection with Fig. 1.

In the form of embodiment of the invention shown in Fig. 7 the stop 11 is formed of a cylindrical bar secured to the terminal of the matrix by brazing or by having the matrix rolled upon itself to form a cylindrical stop, in which latter instance the rolls or coils of the stop will be brazed together.

In the form of embodiment of the invention shown in Fig. 8 the stop 12 is connected with the matrix by a hinged joint 13. The stop shown in this figure is cylindrical in shape; but it is to be understood that it may be a semicone in shape or cone shape and still be within the scope of the invention.

Of course it will be understood that the usual rubber dam will be used and the same will be positioned before the matrix has been secured in place, and as this is a common and well-known procedure illustration is deemed unnecessary.

Having thus described the invention, what is claimed is—

1. A dental matrix comprising a ribbon or band of metal having at one terminal an approximately wedge-shaped stop rigid with the band and provided with a flat outer side, a shoulder and a tip.

2. A dental matrix comprising a ribbon or band of metal, and a stop rigid with each terminal thereof and provided with a shoulder and a tip, the outer faces of the stops being flat, their inner faces rounded.

3. A dental matrix comprising a ribbon or band of metal of a length entirely to encircle one or more teeth, and a wedge-shaped stop carried by one terminal thereof.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

THEODORE GREEN.

Witnesses:
ENOS UTLEY,
JOB UTLEY.