

E. TELLE.
DENTAL PLATE AND METHOD OF MANUFACTURING THE SAME.
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908,626.

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Fig. 1.

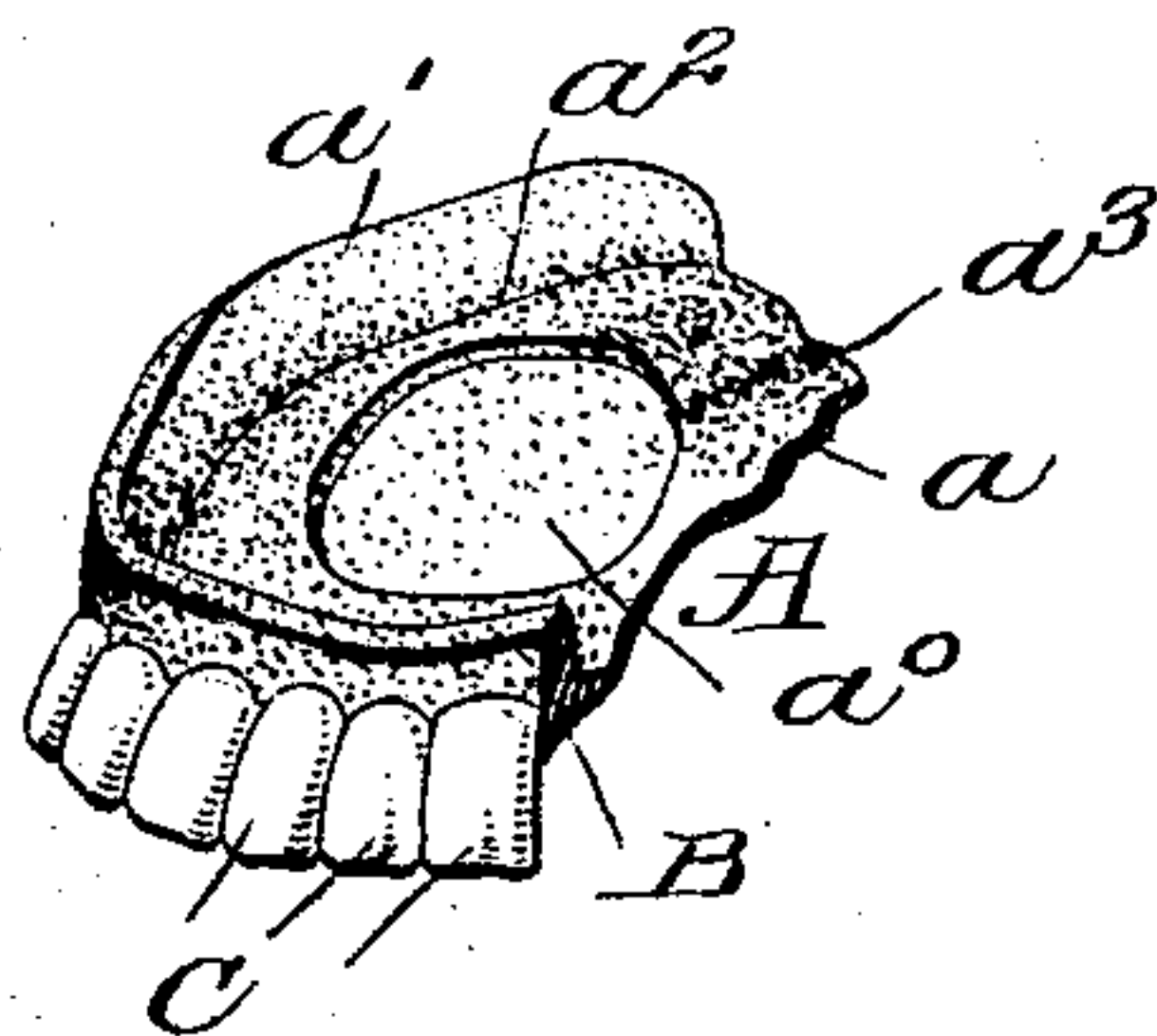


Fig. 2.

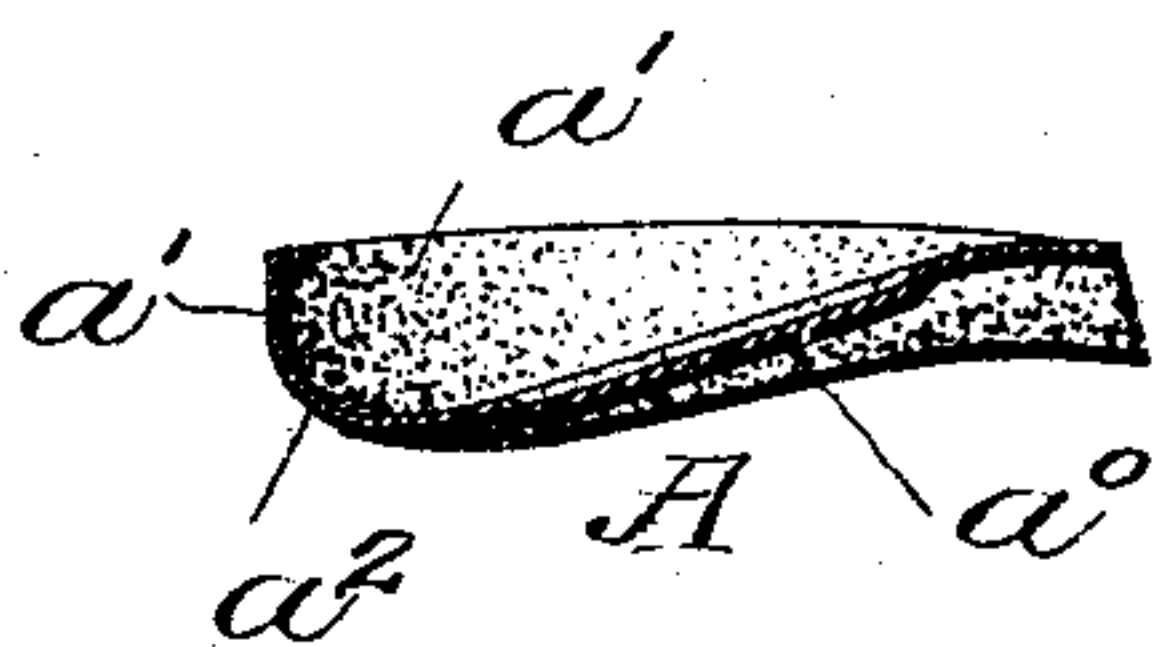


Fig. 3.

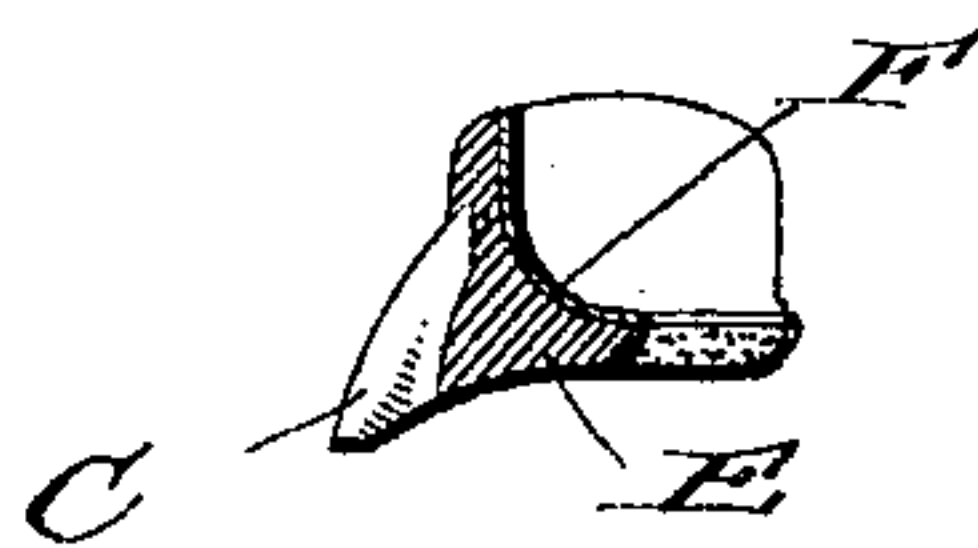


Fig. 4.

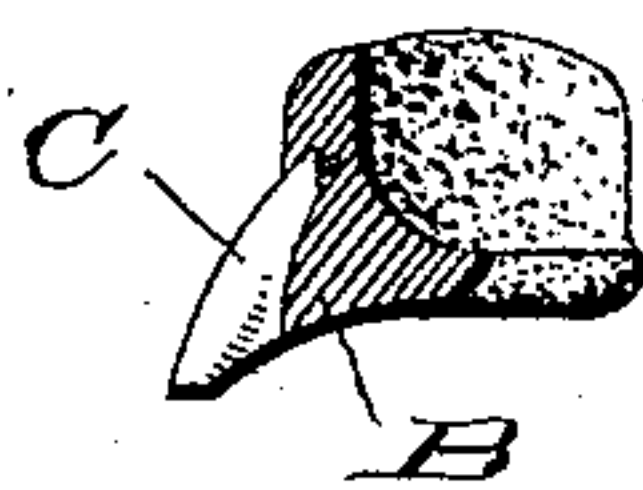
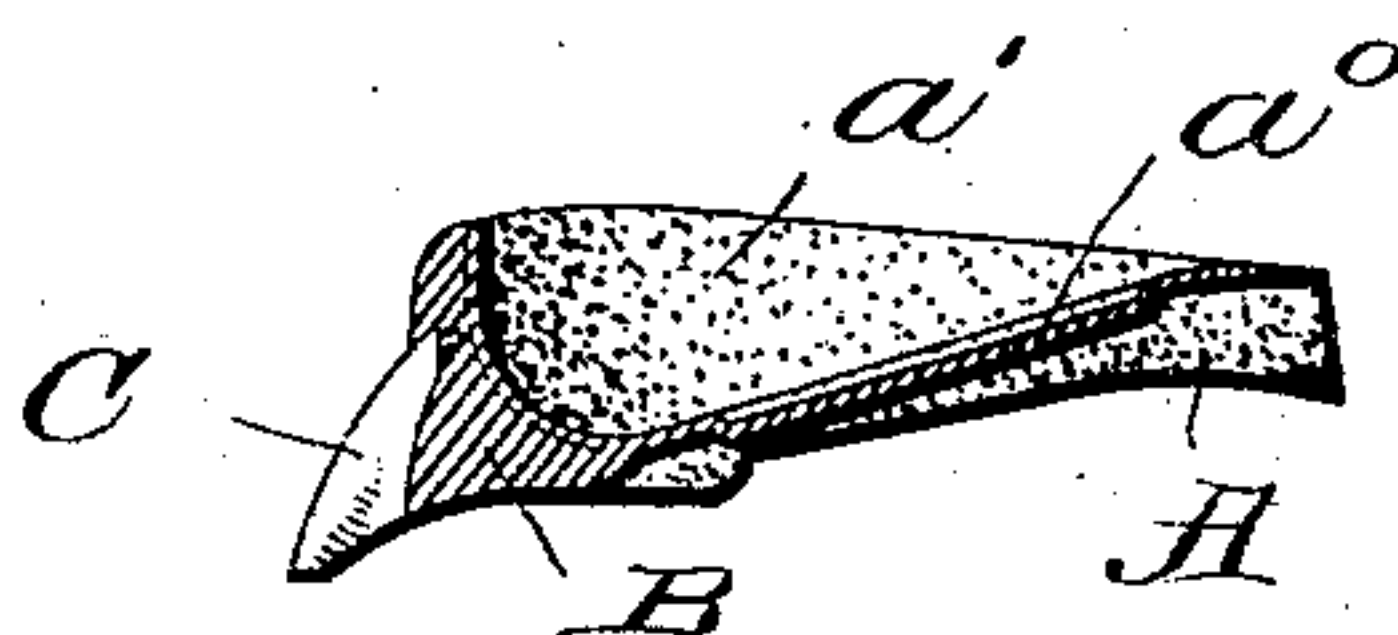


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWIN TELLE, OF NEW ORLEANS, LOUISIANA.

DENTAL PLATE AND METHOD OF MANUFACTURING THE SAME.

No. 908,626.

Specification of Letters Patent.

Patented Jan. 5, 1909.

Application filed March 26, 1908. Serial No. 423,341.

To all whom it may concern:

Be it known that I, EDWIN TELLE, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Dental Plates and Methods of Manufacturing Same; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in dental plates and methods of constructing same, and it consists primarily in providing a thin and more or less flexible plate proper, which is fitted to the shape of the mouth of the prospective wearer, and to which the teeth are subsequently attached, after the fitting referred to, as will be hereinafter more fully described.

My invention will be understood by reference to the accompanying drawings, in which the same parts are indicated by the same letters throughout the several views.

Figure 1 is a perspective view of a plate adapted to carry a full set of teeth, parts being broken away. Fig. 2 is a detail showing a portion of the plate before the teeth are attached. Fig. 3 is a sectional view of the wax pattern carrying the teeth. Fig. 4 is a sectional view showing the segment carrying the teeth before it is attached to the plate proper. Fig. 5 is a sectional view showing the teeth segment attached to the plate, and the whole ready for use.

A represents the plate proper, which is preferably made of thin flexible celluloid or other suitable material, which plate is fitted to the mouth of the wearer, before the segment carrying the teeth is connected thereto.

In the device shown in Figs. 1, 2 and 5, the plate A is provided with a diaphragm a , fitted snugly to the roof of the mouth, and provided with corrugations a^3 , to fit protrusions in the mouth, with flange a' to go over the side of the gums, and with the recess a^2 to fit loosely over the gums, and the bottom plate a fits snugly up against the wall of the mouth. A suction chamber a^0 may or may not be provided and frequently such chamber will not be needed.

The plate A is preferably constructed in the following manner:—Get a good cast of the mouth, construct a thin base plate of wax or other suitable material from this,

the thickness of the wax being the same as the desired finished thickness of the celluloid plate A, which may vary from 28 to 24 Stubbs gage, and thicker when required. The wax should be laid on tin foil before being used, to prevent adhesion; and before using the wax, cover any bumps or ridges in the cast taken from the mouth, with a series of layers of heavy tin foil; employing, say number 60 for the first layer, and have it extend nicely over the crests of said bumps or ridges. The second layer should cover half of the elevations, and the third should cover them completely; so that the celluloid plate later formed on the prepared cast, may have more or less clearance over such lumps or ridges when in the mouth itself. The prepared cast as above described is flaked in the usual way, and when separated the wax is removed by boiling out, if necessary; the celluloid is adjusted and pressed at a sufficiently high temperature. This temperature is preferably run up to 300° F. or more, but is lowered before all the moisture is expelled from the plaster, and before the mold is opened after the compression has been effected. In this way the celluloid may be treated at a higher heat than would ordinarily cause combustion of the same. This treatment renders the celluloid tough, and drives off more or less of the camphor formerly held therein, which camphor is objectionable on account of the reaction on the same by the saliva and acids of the mouth. An excess of the celluloid is placed in the mold, and the parts not used in the formation of the plate itself are forced into recesses provided for them in the mold, and are trimmed off afterwards. The celluloid plate thus formed fits snugly against the walls of the mouth, but has a slight clearance over the various bumps, ridges or other projections in the mouth and thus not only insures a comfortable fit, but also provides such a close fit, except over the bumps or ridges aforesaid, as to do away with the necessity in many instances of a suction chamber, such as shown in a^0 Fig. 1. In fact the clearance over the bumps or ridges will in effect constitute a series of suction chambers. It will be noted that the celluloid plate so formed is thin and more or less elastic, and can be more readily and accurately adjusted to the mouth before the teeth are applied to the plate than afterwards. The plate being so formed, trimmed, and ad-

justed to the mouth, the segment or segments bearing the teeth are prepared and applied, as will now be described.

Where a full set of teeth are to be supplied, it will be more convenient to make the teeth segment as a single piece to be afterwards fitted to the plate proper, and united thereto, as will be hereinafter described; while where scattered teeth are to be used, it would be preferable to construct a plurality of teeth segments, each segment to be fitted to the plate separately and to be united thereto, as will be hereinafter described. Similarly also new teeth segments may be added to an otherwise already manufactured plate.

In order to construct a tooth segment, the teeth are mounted in wax inlaid with tin foil, as shown in Fig. 3, where C represents the tooth, E represents the wax, and F represents the tin foil. This wax with the tin foil is snugly fitted to the plate, and the arrangement of the teeth is provided for in the well known way known to dentists as getting "the bite." This is done by attaching wax or other suitable plastic material to the plate A, which is put in the patient's mouth, and an impression of the opposite teeth is secured. The reproduction of the print secured by this impress, together with the plate, are put in an articulator, the wax is removed from the plate after it has been adjusted in the articulator, and the teeth are then fitted to the plate in the usual way, with wax mounted on tin foil, to prevent adhesion. The teeth so fitted are removed from the plate and put in a flask, the wax is boiled out, and celluloid is substituted therefor, under heat and pressure, as before stated. The completed tooth segment is shown in section, in Fig. 4, where C represents one of the teeth, and B represents the celluloid holding the teeth. There is thus formed a segment bearing the teeth, which is to be attached to the plate proper, as will be hereinafter described. The teeth on this segment are finished up, and the celluloid surface at their base fits snugly against the outer surface of the plate, and the two are cemented together by using a solution of celluloid, which dissolves the faces of the walls of the plate and tooth segment. This dissolved section on solidifying again, forms a weld, so that the two become in effect an integral structure, as shown in Fig. 5.

It will be obvious that two or more segments can be applied to the same plate at the same time or at different times, and thus the plate already made may have additional tooth segments attached to provide for changes, owing to subsequent loss or breaking of teeth, in the mouth of the wearer. Thus it is possible to prepare additional teeth to be affixed to an old plate, or a plain segment to natural teeth requiring it; and

to accurately apply the same without necessitating the surrendering of the plate by the wearer for more than a few minutes at a time.

By making the plate proper thin and more or less flexible, with clearance over the bumps or ridges of the mouth, it is possible to get a very close, snug and at the same time comfortable fit, and the plate being so thin, takes up very little room in the mouth; while the celluloid being tough and flexible, does not tend to crack or break off like the vulcanized rubber plates, which are so much in use.

While I have described celluloid as the preferable material for use in the manufacture of the plate and tooth segments, for reasons already stated, it will be obvious that any other suitable material may be adapted, and any other suitable cement for joining the two parts together may be used if desired.

It will be obvious that the process of forming and adjusting the plate and the tooth segment or segments may be varied in many ways, according to the skill of and the facilities available to the operator.

The herein described method of fitting the plate to and securing in the mouth is especially suited for what are technically known as "difficult mouths", which as a rule may be comfortably and accurately fitted, as hereinbefore described.

It will be obvious that various modifications might be made to the herein described method and apparatus, which could be used without departure from the spirit of my invention.

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

1. The method of manufacturing dental plates which consists in, first, preparing a thin plate adapted to fit snugly in the mouth of the patient, second, preparing one or more separate tooth segments adapted to fit snugly over a portion of the said plate, and, third, cementing the two together substantially as described.

2. The method of manufacturing dental plates which consists in, first, molding a thin plate of celluloid to fit snugly in the mouth of the patient, with clearance spaces to go over raised portions of said mouth, second, preparing one or more separate tooth segments, having the teeth embedded in a celluloid socket, adapted to fit snugly over a portion of the said plate, and, third, uniting the two together by means of a solvent for the adjoining faces, substantially as described.

3. The method of manufacturing dental plates which consists in, first, preparing a thin plate of tough elastic material adapted to fit snugly in the mouth of the patient,

second, preparing one or more separate tooth segments adapted to fit snugly over a portion of the said plate, and, third, uniting the plate and the tooth segment by means of a solvent for the material forming the adjoining faces of the plate and segment, substantially as described.

In testimony whereof, I affix my signature, in presence of two witnesses.

EDWIN TELLE.

Witnesses:

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F. B. WALKER.