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MANUFACTURE OF DENTAL PLATES.

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Fig. 1.

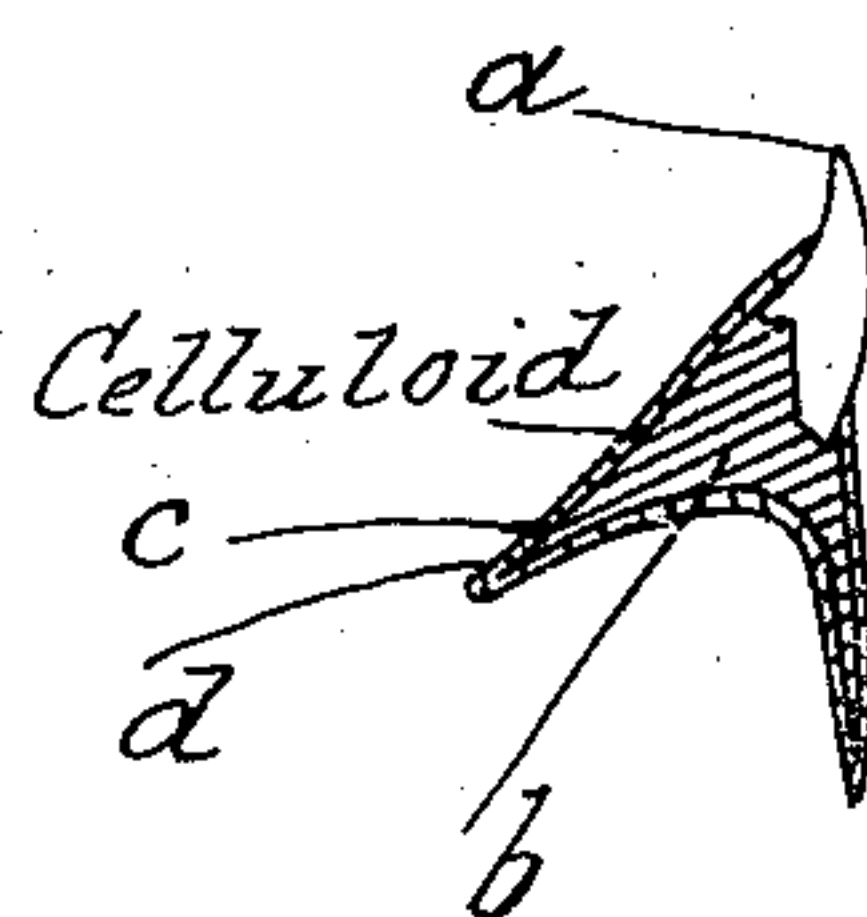
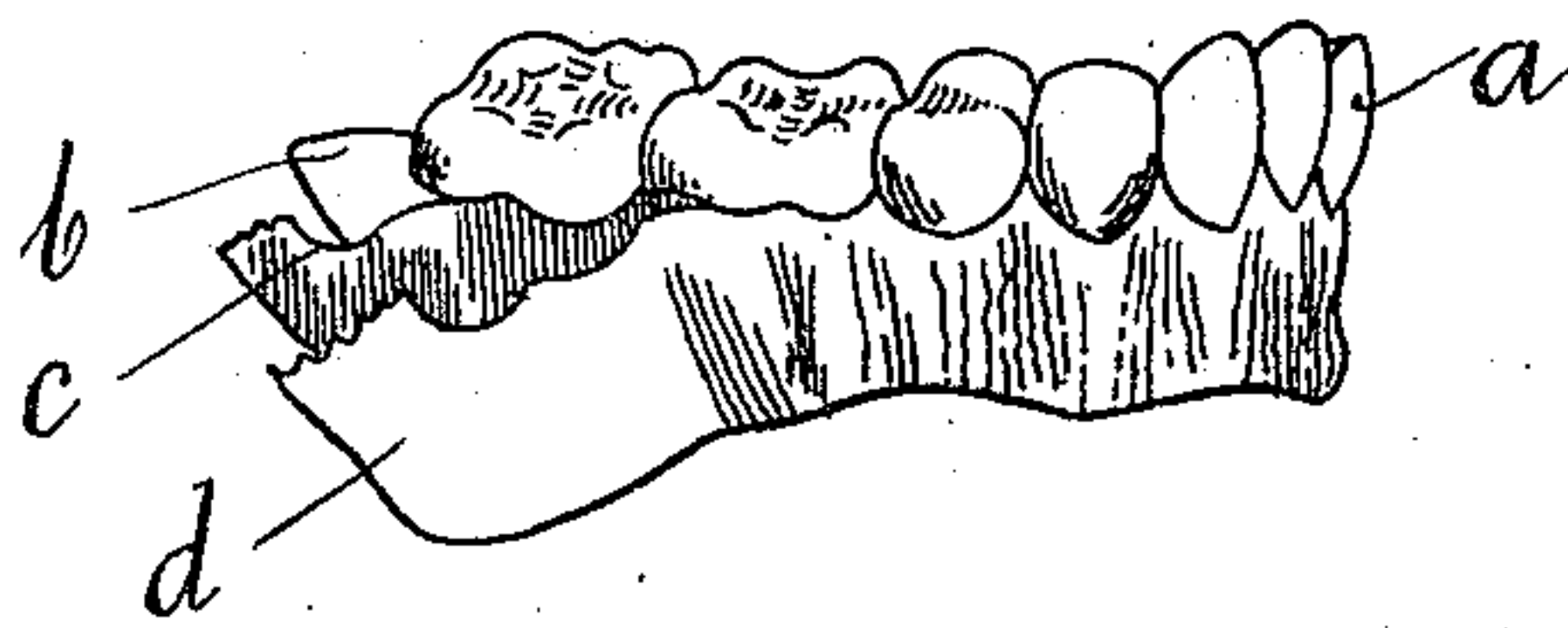


Fig. 2.

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MANUFACTURE OF DENTAL PLATES.

990,320.

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To all whom it may concern:

Be it known that we, IVAN GATES WARREN and HERBERT ARTHUR EDWARDS, both dental manufacturers, residing at 6/10 Lexington street, London, England, have invented certain new and useful Improvements in the Manufacture of Dental Plates; and we 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.

This invention relates to improvements in the manufacture of dental plates, and has reference to a method of covering the dental plate by a subsequent process or treatment, and so render same an imitation of the human gum.

In the accompanying drawings, Figure 1 is a side view of a dental plate with portions of the layers bent up to illustrate the manufacture. Fig. 2 is a cross-section through the plate.

Hitherto many attempts have been made to produce a covering to dental plates or a dental plate itself whose coloring and texture could be made to harmonize and accord with the gum of the wearer, but any effectual success in this direction has been lacking, since the color must be capable of manipulation, and a substance also employed externally that will give a polished and yet minutely indented surface in imitation of the mucous membrane. Further whatever material be employed it must be proof against the chemical action of the saliva and preferably of a character that will enable repairs or additions to be made to the plate.

In order to give a depth of color and impart what may be known as a "live" effect to the plate it is necessary that a suitable coloring matter be incorporated with the covering and this laid on over a white, bluish white, or white tinted base, whereby the base will reflect the light through superimposed layers of semi-transparent and colored matter.

In carrying this invention into effect white celluloid is applied to the plate in a layer or in layers depending upon the consistency of the white celluloid solution. Previous to such application the dental plate is rendered chemically clean by dipping in an alkali solution and then repeatedly washing in running water the last bath being in

water that is on the acid side of neutral, such acidity being produced with a few drops of sulfuric or hydrochloric acid to destroy any trace of adhering alkali. The plate is then dried in hot air or over the flame of a spirit lamp, care being taken not to touch the surface with the fingers. The white celluloid forming the first coating must be of the best quality obtainable, free from any excess of camphor, and the whiteness as dense and positive as possible.

Any suitable solvent for the celluloid may be employed and in operation the solution while drying quickly allows of sufficient time to manipulate its application to the plate.

In previous attempts to obtain a suitable base we have employed gutta percha dissolved in chloroform, (known as chloropercha) but when this substance is subsequently coated, the appearance is neither so live, or the final appearance so similar to the human gum as the product forming the subject matter of this invention.

The white celluloid base is applied to the plate by means of a brush until the desired depth is obtained and no indication of the color of the plate beneath is discernible. The whole of the plate is thus covered up to the point where the teeth commence to protrude and the base thus applied left to dry or assume a state of dryness that a top coating can be applied without risk of disturbing the lower one. The layers of tinted transparent or semitransparent celluloid are applied to the base the one after the other as rapidly as they can dry, this coating operation being performed preferably by the aid of a thin palette knife, a good rule for judging the amount required for each coating being to dip the knife into the solution about an inch deep and use the whole of the adhering material for one layer. The coloring matter is to a more or less degree judged by the operator to match the patient's gum, a very excellent pigment for the purpose being alizarin red, two or three drops in four ounces of the celluloid solution being sufficient coloring for the first few layers. Subsequent layers may be applied with more color than those applied next the white celluloid base, this point being as before stated a question of skill on the part of the operator. The last layer or outer covering is made as thin as possible

and dried quickly in dry heat so as to finish the surface with a high polish.

For the purposes of repair the celluloid may be removed with heat and if care be exercised the upper layers will detach themselves from the base.

In this way a perfectly natural rosy tint is imparted to the plate so covered in an almost undetectable imitation of the human gum, the color being "live" and not presenting an unbroken, even, and dead colored appearance so inseparable from plates made in the usual and well known manner. Further the celluloid covering is an insulating material and a perfect protection against galvanic action so often set up between the metal plate and a tooth stopping of a metal of dissimilar potential and which produces an unpleasant taste in the mouth of the wearer.

We are aware of what is known as continuous gum work, in which porcelain clay is used as a colorless base, and which is afterward glazed with colored glass enamel in imitation of the gum, but the feeling of coldness in the mouth, the liability of fracture, and difficulty of repair places this

process in a category apart from our invention herein described.

The plate *b* is provided with teeth *a* in the usual way, and the plate is coated with opaque material *c* such as white celluloid, and subsequently covered with an outer coating of translucent celluloid *d* tinted to match the gums of the wearer.

We claim.

1. In the manufacture of dental plates, the process of first coating the plate with opaque material, and subsequently adding a coating of translucent material tinted to match the gums.

2. In the manufacture of dental plates, the process of first coating the plate with white celluloid, and subsequently adding a coating of translucent celluloid tinted to match the gums.

In testimony whereof we affix our signatures in presence of two witnesses.

IVAN GATES WARREN.
HERBERT ARTHUR EDWARDS.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
