

May 15, 1923.

1,455,518

L. BALTER

DENTAL TRAY

Filed March 3, 1922

Fig. 1.

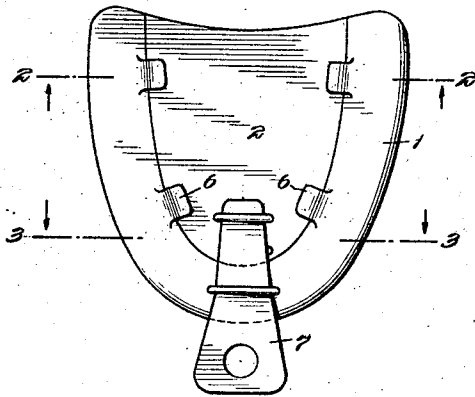


Fig. 2.

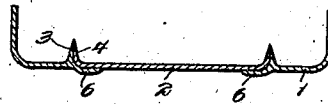


Fig. 3.

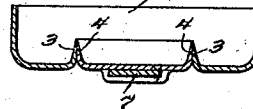


Fig. 4.

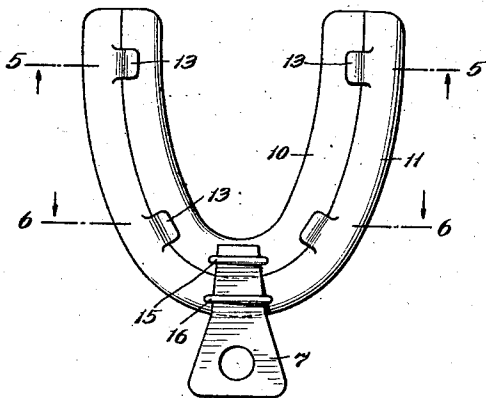


Fig. 5.

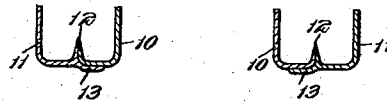
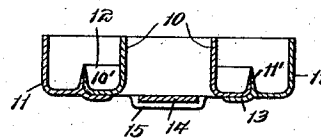


Fig. 6.



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UNITED STATES PATENT OFFICE.

LOUIS BALTER, OF NEW YORK, N. Y.

DENTAL TRAY.

Application filed March 3, 1922. Serial No. 540,683.

To all whom it may concern:

Be it known that I, LOUIS BALTER, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Dental Trays, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to improvements in dental trays.

It is an aim of the present invention to provide an improved tray for dental purposes, which shall be especially useful in taking plaster impressions for use in making upper and lower sets of artificial teeth. By the use of the present tray, various difficulties heretofore experienced have been overcome, some of which have been due either to the presence of one or more teeth remaining in the jaw of which the impression is to be taken, with consequent adherence of the plaster to such tooth or teeth, thus occasioning much pain to the patient in attempting to remove the plaster cast in as few parts as possible to facilitate its assembly for further use. In many instances, however, it is necessary to break the plaster cast to an objectionable extent and, in numerous cases, into so many parts that reassembly thereof is impossible, with the result that the whole operation has to be repeated. Even where no teeth are in the jaw of which a plaster impression is to be made, it frequently happens that there are ridges on the gums, and this, of course, will occasion much difficulty in removal of the plaster therefrom until broken to an unfavorable extent with much discomfort to the patient. Briefly, the present invention comprises a tray made up of a plurality of parts or members, and having means positioned therein for weakening or otherwise predisposing the plaster cast to breakage on a predetermined line, which, in the best forms of the invention, will be a line conforming generally to the curvature of the teeth or gums, so that the plaster may be removed, in many cases, in two parts, and at least in such a small number of parts as to greatly facilitate its reassembly. Also, due to the separable tray sections or members being so formed as to enable them to be forced apart readily, as hereinafter explained, to a sufficient extent

to cause breakage of the plaster on such predetermined line, and due to the fact that such breaking force is applied laterally to the teeth embedded in the plaster, or to the gums, it will be readily seen that the patient suffers no ill effects in the operation of taking an impression for either a whole, partial, or half plate, as heretofore.

In order that others skilled in the art may understand the invention, one best embodiment thereof in both an upper and a lower tray construction, and also a half tray, will now be described in detail, in connection with the accompanying drawings, and the novel features of the invention then be pointed out in the claims.

In the drawings—

Figure 1 is a bottom plan view of a tray made according to the present invention and intended for making plaster impressions for use in forming an upper plate;

Figures 2 and 3 are, respectively, sections on the lines 2—2 and 3—3 of Fig. 1;

Figure 4 is a bottom plan view of a tray made according to the present invention and intended for making plaster impressions for use in forming a lower plate;

Figures 5 and 6 are, respectively, sections on the lines 5—5 and 6—6 of Fig. 4.

Referring now to the drawings, and particularly to Figs. 1, 2 and 3, the tray consists of separable members 1, 2, the line of separation between such members preferably conforming in shape approximately to the tooth or gum-line of a human mouth. Along the line of separation of the tray members, the metal or other material of which the tray is formed is bent or turned up, as shown in Figs. 2 and 3, to form ridges or flanges 3, 4, the meeting edges of which are arranged to abut and so shaped as to form a single sharp edge at their meeting point, whereby the plaster, after it sets on the teeth or gums, or both, is weakened along a predetermined line to an extent favoring its breakage on such line when the parts are forced slightly apart by the insertion of a flat instrument of any nature between the members making up the tray and then turning such instrument. It will be found that a very slight force only need be applied to cause the plaster to separate along the line of the ridge formed by the edges 3, 4, and no special provision for movement of the members 1, 2 with respect to each other need be provided to permit this, as

the metal of which the tray members is composed will possess spring qualities sufficient for the purpose.

To facilitate assembly of the tray for the reception of plaster or modeling material, tongues 6 may be stamped out of the ridge forming portion of the outer tray member, and such tongues then bent outward, as shown in Fig. 2, to support the part 2 on which the plaster for taking impressions of the lingual arch rests. One manner of securing the tray members 1, 2 together, and also providing a convenient form of handle for the tray when in use, is shown, this consisting of handle portion 7 having a wedge shaped part arranged to enter and frictionally engage staples or bails 8, 9 formed on or secured to the parts 1, 2, respectively. The handle may thus be removed after the tray is positioned in the mouth and the plaster is about to set, or has set, and the time has arrived when the plaster is to be cracked, as above explained, for removal.

In Figs. 4, 5 and 6, there is shown a tray especially intended for use in making plaster impressions for a lower plate, the principle of operation of which is generally the same as that described above with reference to Figs. 1, 2 and 3. In this case, however, the inner tray member 10, with the outer tray member 11 in position for use, forms in effect an approximately semi-circular trough surrounding a lingual cavity, the meeting edges 10', 11', respectively of which, as in the case of Figs. 1, 2 and 3, form a sharp edge 12, due to the tapering off of the material forming such turned up edges. The two parts of the tray here shown are, like the construction shown in Fig. 1, handled with greater facility and more firmly secured together while being positioned in the mouth, by the provision of a handle 7 of a shape similar to that of Fig. 1, entering and frictionally engaging staples or bails 15, 16 formed, respectively, on the inner and outer tray members 10, 11, as clearly shown in Figs. 4 and 6. The means for securing separation of the plaster cast in this form of the tray is the same as that described above with respect to Fig. 1 and, therefore, needs no further description.

The members of this half tray may be conveniently secured together in any desired

manner, or as shown, by tongues 18, 19, at one end, and staples or bails 20, 21, secured to two members 22, 23, respectively, of the half tray, and arranged to receive a handle 24, which frictionally engages said staples 20, 21. The shape in cross section of this half tray is approximately the same as shown in Fig. 5.

It will be understood that I do not confine myself to any specific shape of tray, or the means for temporarily securing the tray members together, as obviously many changes and modifications of such parts, as well as of other features of the device, may be made, while still retaining the invention defined by the claims.

Generic claims to the broad invention herein shown are made in applicant's co-pending application, Serial No. 613,323.

What I claim is:

1. A dental impression tray, comprising an inner member arranged to hold moulding material in taking impressions of the palatal arch and upper jaw, a separable outer member surrounding said inner member on all sides except at the back thereof, a flange formed on the inner side of said outer member, a flange formed on the outer side of said inner member, the edges of said flanges being arranged to abut and form a sharp edged ridge of a shape approximating that of a set of teeth, and a handle having a portion arranged to co-operate with means formed on the bottoms of said tray members to hold the same together when in use.

2. A dental impression tray comprising an inner member having a lingual cavity in its middle portion, a separable outer member surrounding said inner member on all sides except at the back thereof, a flange formed on the inner side of said outer member, a flange formed on the outer side of said inner member, the edges of said flanges being arranged to abut and form a sharp-edged ridge of a shape approximating that of a set of teeth, and a handle having a portion arranged to co-operate with means formed on the bottoms of the tray members to hold the same together when in use.

In testimony whereof, I have hereunto set my hand.

LOUIS BALTER.