Nov. 9, 1926. 1,606,069

H. FREEDMAN ET AL

BRIDGE TRAY

Filed Feb. 12, 1924

Fig. 1.

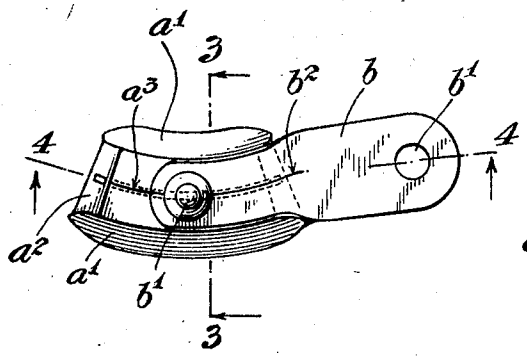


Fig. 2.

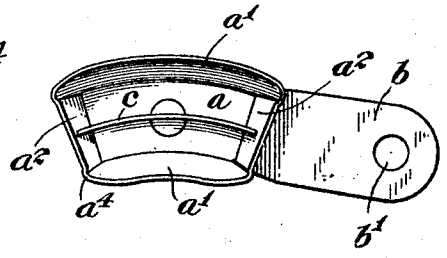


Fig. 3.

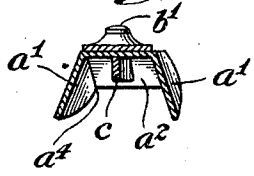


Fig. 4.

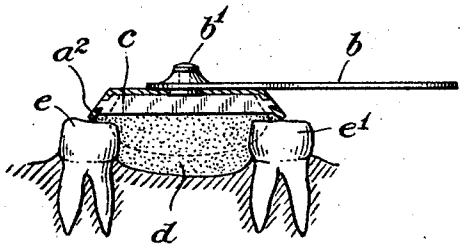


Fig. 6.

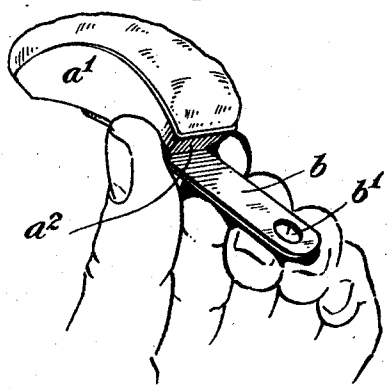
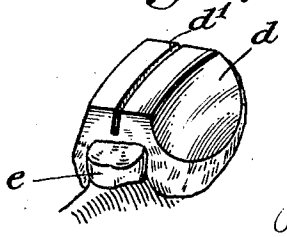


Fig. 5.



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UNITED STATES PATENT OFFICE.

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BRIDGE TRAY.

Application filed February 12, 1924. Serial No. 692,227.

This invention relates to bridge trays for taking denture impressions with plaster or other plastic mediums where, say, one or two teeth are missing and it is desired to have an impression of the gum where the tooth or teeth are missing and the two teeth there-adjoining. The invention seeks to provide a unitary tray, that is one having no separable parts, which is applicable in any situation where a denture impression is desired and one which can be readily removed after the cast is made to permit the independent removal of the cast containing the impression. Accordingly the tray has two side walls which will hold the plaster of sufficient depth for the purpose and two end walls which form a continuous edge with the side walls to avoid tray undercuts which would prevent the easy removal of the tray. Both side and end walls are inclined to facilitate the discharge of surplus plaster downwardly and outwardly. A longitudinally extending rib is disposed between the side walls and secured to the end walls to create a line of weakness or cleavage in the cast by which it may be readily separated to permit withdrawal of the complementary parts from opposite sides of the cavity. The end walls extend below the lower edge of the rib and are adapted to rest upon the adjoining teeth to serve as a gauge for the plaster impression, a sufficient thickness of plaster being formed between the cleavage groove and the adjoining teeth to permit an adequate impression thereof to be obtained. The rib is carried with the end walls thereby permitting a handle to be pivotally connected to the base of the tray so that the handling may be disposed at a convenient angle whereby impressions may be taken in the mouth at either side of the upper or lower areas of the mouth. The base of the tray on the external surface thereof has a line or groove running the length thereof in a manner corresponding to the direction of the rib and a similar indication is also carried by the handle in order to designate with accuracy the longitudinal median line of the tray for positioning over the midpoints of the teeth whereby the cleavage may be effected at the interproximate embrasures.

These and other objects of the invention will be apparent from the following description taken in connection with the accompanying drawings illustrating the preferred embodiments of the invention in which:

Figure 1 is a view of the tray looking from above.

Figure 2 is a view of the tray looking from below and showing the rib adapted to create a line of cleavage in the cast.

Figure 3 is a sectional view of the tray taken in the plane indicated by the line 3—3 in Figure 1 and looking in the direction of the arrows.

Figure 4 is a view partly in section showing the tray and plaster in position to take an impression of the gum and two adjoining teeth.

Figure 5 is a view showing the plaster cast after it has been formed in place and with the tray removed to show the cleavage groove.

Figure 6 is a view showing the manner in which the tray is held by an operator about to take an impression on the upper jaw.

Referring to the drawings it will be observed that the tray is formed of the base portion a, divergent side walls a', a' and the divergent end walls a^2, a^2 forming a continuous lower edge a^4. Secured to the base a is the handle b by means of the pivot b' whereby the handle may be caused to take different positions with respect to the tray. The handle also may be conveniently provided with a hole b' whereby it may be readily hung up when not in use. Secured to the end walls a^2 is a rib c disposed in the longitudinal median line of the tray. It will be apparent when the plaster cast d is made that this rib will form a groove or line of cleavage d'. The rib while disposed in proximity to the base a does not extend to the lower edge of the side walls but terminates so far above the lower edge that a sufficient thickness of plaster is left between the rib and the teeth say, e e' as to insure a satisfactory impression thereof. On its external surface the base a may carry a line or groove a^3. This line extends the length of the tray in a manner corresponding to the direction of the rib c. The handle is also formed with a similar line or groove b^2 to form a continuation of the line a^3 when the handle is in the general longitudinal direction of the tray. The purpose of the groove or line is to designate with accuracy the longitudinal median line of the tray to enable the operator to place the tray

containing plaster along the median line of the teeth so that the rib will be directly over the midpoints of the teeth or space where teeth are missing so that a line of cleavage is formed at the line where the separation of the two halves of the impression at the interproximate embrasure is facilitated.

In use, plaster is placed in the tray and the tray is then placed over the gum where teeth are missing and used to force the plaster into place on the gum and on the adjoining teeth. Pressure is maintained on the tray until the end walls rest on the teeth. When in this position the rib will be stopped at a point above the two teeth, the impressions of which are to be taken and a sufficient thickness of plaster left between the rib and such teeth to insure an impression being taken. During this manipulation surplus plaster will be squeezed out past the inclined end walls, but will be deflected by them in such manner as to prevent any plaster from over-lying the under surface of the tray. As the lower edges of the end and side walls are continuous no plaster can flow and harden over an edge of the tray to prevent the easy removal thereof. As the plaster hardens a cleavage groove will be left in its upper surface by the rib. The cast cannot be withdrawn from the cavity by directly withdrawing it since the adjoining teeth overhang to some extent the gum. Accordingly, it becomes necessary to withdraw the cast laterally. To do this, the tray is first removed and the cast is broken into two sections along its median line each half being withdrawn laterally from the gum and teeth. With such a line of cleavage as the impression of the rib insures in the cast the operator may divide the cast cleanly into two parts either with his fingers or by inserting an instrument such as a knife in the groove. After removal the two parts may be reunited by cement and the bridge made.

The tray is simple and inexpensive to manufacture. Being of unitary form it is convenient to manipulate and requires no assembling of parts. There is no risk of losing parts and the tray itself is not required during the manufacture of the bridge.

What we claim is:—

1. In a tray for denture impressions, a unitary structure comprising a base portion, diverging side and end walls forming a continuous edge, a rib carried with the end walls and disposed in the longitudinal median line of the tray at a distance from said continuous edge, a pivoted handle, and means to indicate the longitudinal median line of the tray.

2. In a tray for denture impressions, a unitary structure comprising a base portion, diverging side and end walls forming a continuous edge, a rib secured to the end walls in the longitudinal median line of the tray and spaced from the continuous edge and a pivoted handle formed with an aperture, the said base portion being formed with a groove in the longitudinal median line of the tray and said handle being formed with a corresponding groove.

This specification signed this 8th day of February A. D. 1924.

PAUL J. FREEDMAN.
HYMAN FREEDMAN.