Nov. 3, 1953 M. P. SWEENEY 2,657,461

DENTAL IMPRESSION TRAY

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Fig. 1

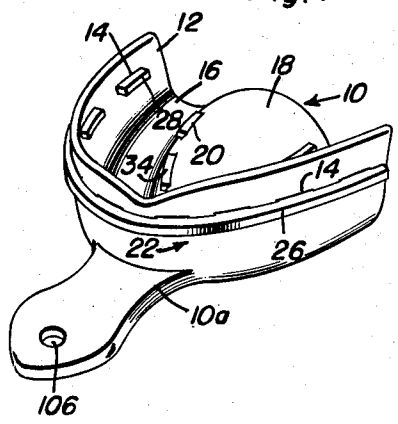


Fig. 2

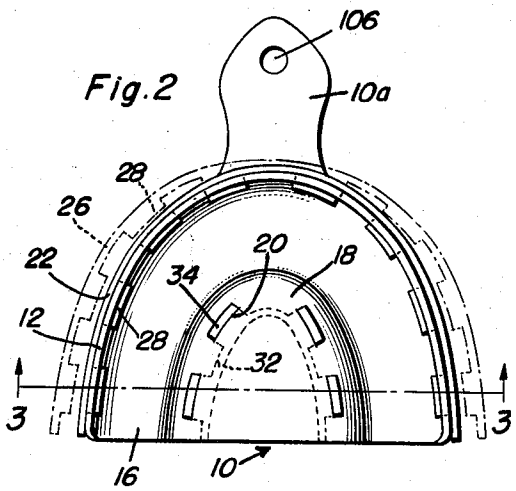


Fig. 3

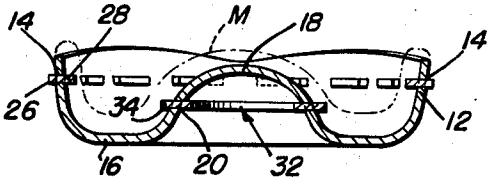


Fig. 4

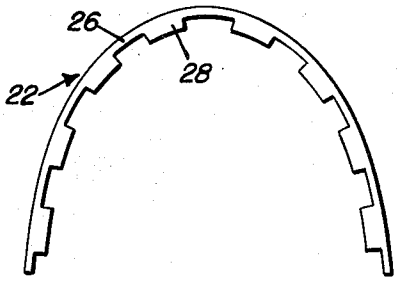


Fig. 6

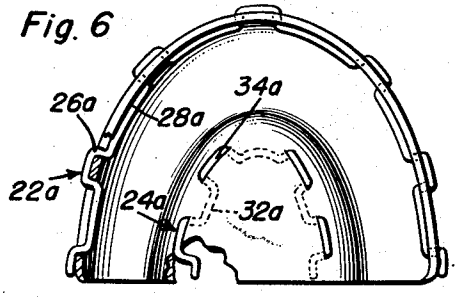


Fig. 5

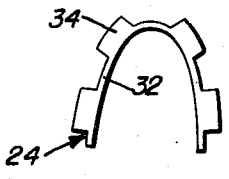
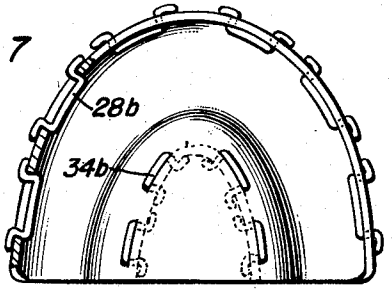


Fig. 7



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DENTAL IMPRESSION TRAY

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8 Claims. (Cl. 32—17)

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This invention relates to new and useful improvements in dental impression trays and the primary object of the present invention is to provide a dental impression tray having novel and improved means for removably retaining a charging material within the tray.

Another important object of the present invention is to provide a dental impression tray involving a quick release locking means, whereby the elastic impression material in the tray may be removed in a convenient manner without harmfully affecting the model material although the same is not completely set.

A further object of the present invention is to provide a dental impression tray whose locking means for impression material is so designed as to permit the use of softer model materials than was heretofore used, such as plaster of Paris or casting investment.

A still further aim of the present invention is to provide a dental impression tray that is simple and practical in construction, strong and reliable in use, efficient and durable in operation, inexpensive to manufacture, and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of the present invention;

Figure 2 is a plan view of the present invention;

Figure 3 is a vertical sectional view taken substantially on the plane of section line 3—3 of Figure 2;

Figure 4 is a plan view of the outer spring member used in the invention;

Figure 5 is a plan view of the inner spring member used in the invention;

Figure 6 is a plan view of the invention in modified form and with parts broken away; and,

Figure 7 is a plan view of the invention in further modified form and with parts broken away and shown in section.

Referring now to the drawings in detail, wherein for the purpose of illustration, there is disclosed a preferred embodiment of the present invention, the numeral 10 represents a tray member or body portion having an upwardly curved flange 12 that is formed with spaced slots 14. The bottom wall 16 of tray member 10 is pressed upwardly to form a hollow rib 18 that follows

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the shape of the flange 12. The rib 18 is provided with spaced slots 20 that are located in a plane spaced parallel to and disposed closer to the wall 16 than the plane through the slots 14.

Means is provided for releasably retaining an impression material within the tray member 10. This means comprises inner and outer resilient elements 22 and 24 shown in Figures 4 and 5, respectively. The outer resilient element 22 comprises an arcuate or U-shaped spring 26 having spaced lugs 28 on its inner edge. The spring 26 yieldingly embraces the flange 12 and the lugs 28 are urged through the slots 14 into the interior of the member 10.

The inner resilient element 24 also comprises an arcuate or U-shaped spring 32. Spaced lugs 34 are formed on the outer edge of the spring 32. The element 24 is disposed within the rib 18 and bears against the inner surface of the rib with the lugs 34 urged through the slots 20 and into the interior of the member 10.

Figure 6 shows the two coacting spring locking members in modified form. In this embodiment, the outer spring element 22*a* is comprised of a U-shaped wire member 26*a* having spaced lugs 28*a* pressed laterally therefrom to extend inwardly through the slots 14 in the flange of the tray member.

The inner spring element 24*a* includes an arcuate or U-shaped wire member 32*a* having outwardly projecting spaced lugs 34*a* that are urged through the slots 20 in the rib 18 of the tray member 10 and into the interior of the tray member.

Figure 7 illustrates the locking means for the impression material in further modified form. In this form of the invention, the locking means is composed of inner and outer groups of U-shaped resilient lugs 34*b* and 28*b* that will project through the slots 20 and 14 and into the interior of the tray member 10. The ends of the lugs 34*b* and 28*b* are turned outwardly to bear against the inner surface of rib 18 and the outer surface of flange 12 respectively.

Obviously, the number of slots 14 and 20 in the parts 12 and 18 of the tray member may be increased or reduced depending upon the character of the impression material placed in the tray member. The spring locking elements are quickly and readily removed from the tray member in a convenient manner after the impression material M has hardened and before the model material has hardened.

The tray member 10 is formed with or fixedly secured to a hand gripping portion 10*a* having

an aperture 106 therein for accommodating a wall fastener, whereby the tray member may be hung when not in use.

The tray member 10 may be constructed of any suitable material, such as aluminum, plastics, acrylic resins or metallic compositions.

The impression tray shown comprises an upper impression tray. A lower impression tray may be constructed quite similar to the upper impression tray although the shape may vary. The resilient locking means disclosed in Figures 1-7 inclusive will form a part of the lower tray.

In use, elastic impression materials are introduced into the impression tray as a paste or soft mass. The tray is then placed in the patient's mouth and held steadily for about three or four minutes, during which time the elastic impression material hardens. The tray and impression are together withdrawn from the patient's mouth. The next step is pouring artificial stone, plaster of Paris, of casting investment into the impression. When the model has hardened, the tray and impression are jointly pulled from the model.

Having described the invention, what is claimed as new is:

1. An impression tray comprising a tray member having an outer flange and a central hollow rib, anchoring means removably positioned in the rib and extending into the interior of the member for retaining a charging material in the member, and additional anchoring means on the flange extending into the interior of the member for coacting with the first named means.

2. An impression tray comprising a tray member having an outer flange and a central rib, a resilient member disposed about the flange and having portions extending through the flange and into the interior of the member, and an anchoring element within the rib and having anchoring lugs extending through the rib and into the interior of the member.

3. An impression tray comprising a tray member having an outer flange and a central rib, a resilient member disposed about the flange and having portions extending through the flange and into the interior of the member, and a resilient anchoring element within the rib and having spaced lugs thereon projecting through the rib and into the interior of the member.

4. An impression tray comprising a tray member having an outer flange and a central rib, a resilient member disposed about the flange and having portions extending through the flange and into the interior of the member, and an arcuate spring element having spaced lugs thereon, said spring element being received within said rib, and said rib having spaced slots accommodating the lugs.

5. In an impression tray comprising a tray member having a central hollow rib and an upstanding flange, said rib and said flange having spaced slots therein, an outer spring member about the flange and having lugs thereon extending inwardly through the slots in said flange, and an inner spring member within the rib and having spaced lugs extending through the slot in the rib and into the interior of said member.

6. In an impression tray comprising a tray member having a central hollow rib and an upstanding flange, said rib and said flange having spaced slots therein, an outer spring member about the flange and having lugs thereon extending inwardly through the slots in said flange, and an inner spring member within and yieldingly bearing against the walls of the rib and having spaced lugs thereon projecting through the slots in the rib and into the interior of the member.

7. In an impression tray comprising a tray member having a central hollow rib and an upstanding flange, said rib and said flange having spaced slots therein, an outer spring member about the flange and having lugs thereon extending inwardly through the slots in said flange, and an inner spring member within the rib and having spaced lugs extending through the slot in the rib and into the interior of said member, said outer spring member yieldingly engaging the outer surface of said flange.

8. In an impression tray comprising a tray member, having an outer flange and a central rib, both said flange and said rib having spaced slots, U-shaped lugs extending through the slots in both said flange and said rib and into the interior of said member.

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