

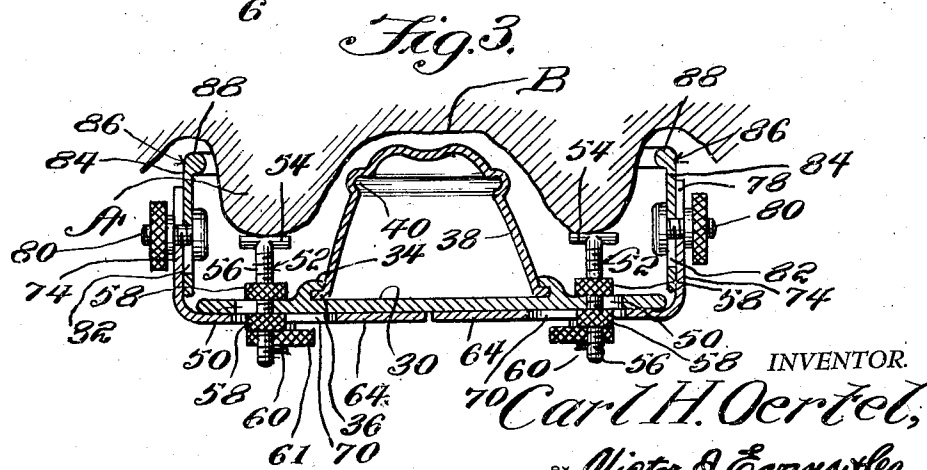
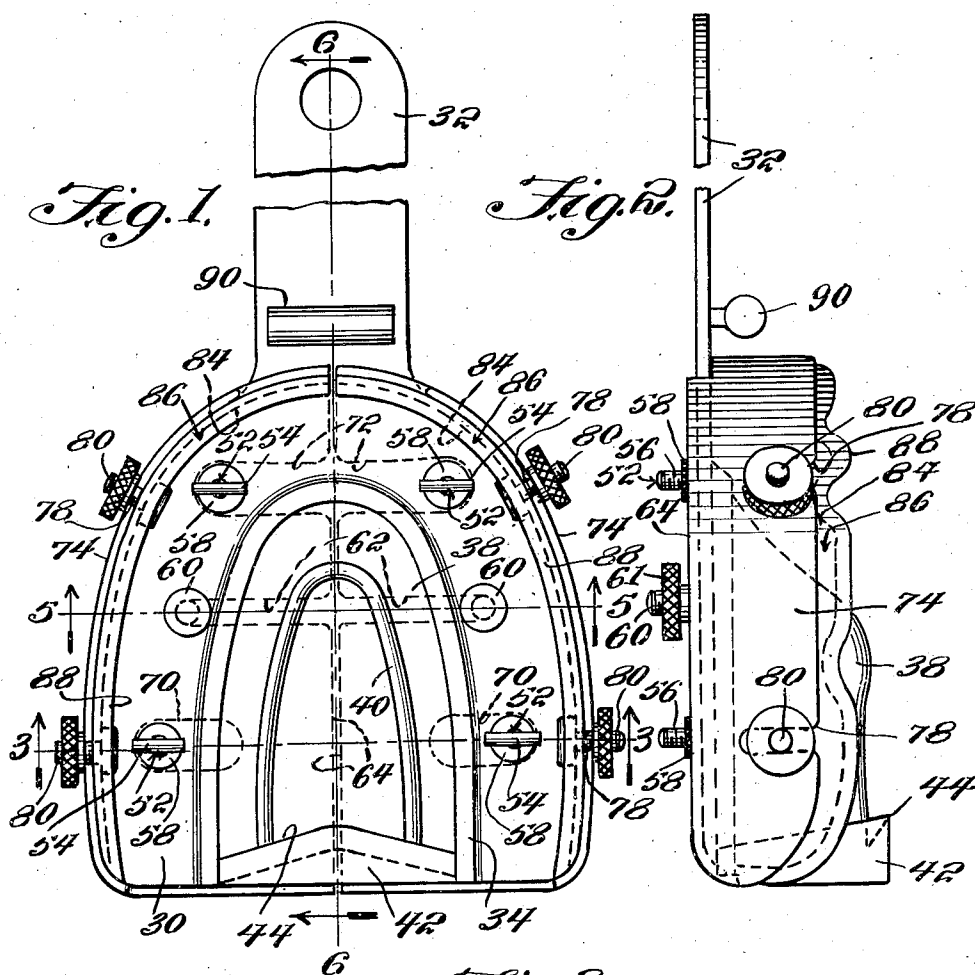
Nov. 2, 1948.

C. H. OERTEL
COLLOID DENTAL TRAY

2,452,866

Filed Sept. 26, 1945

3 Sheets-Sheet 1



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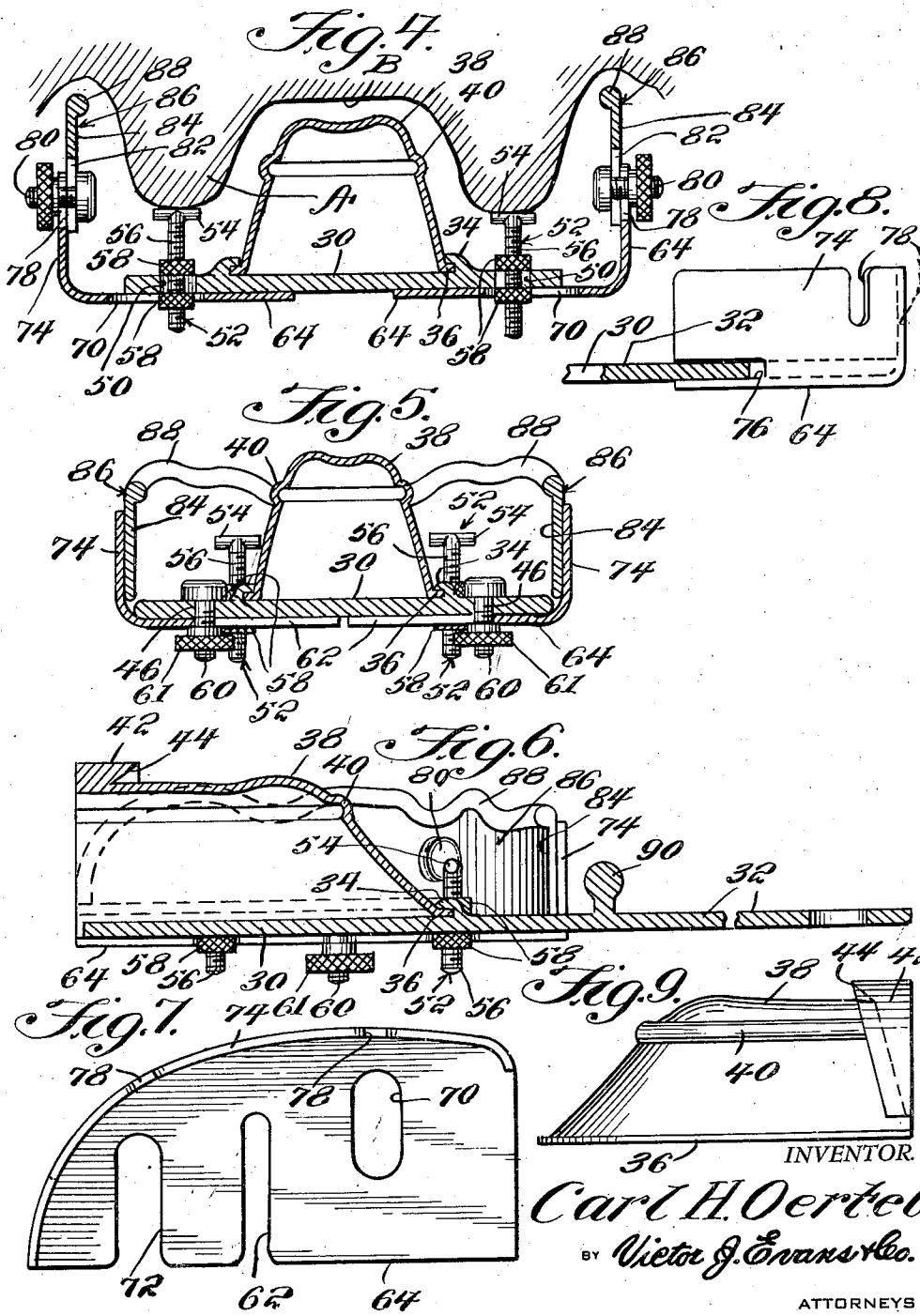
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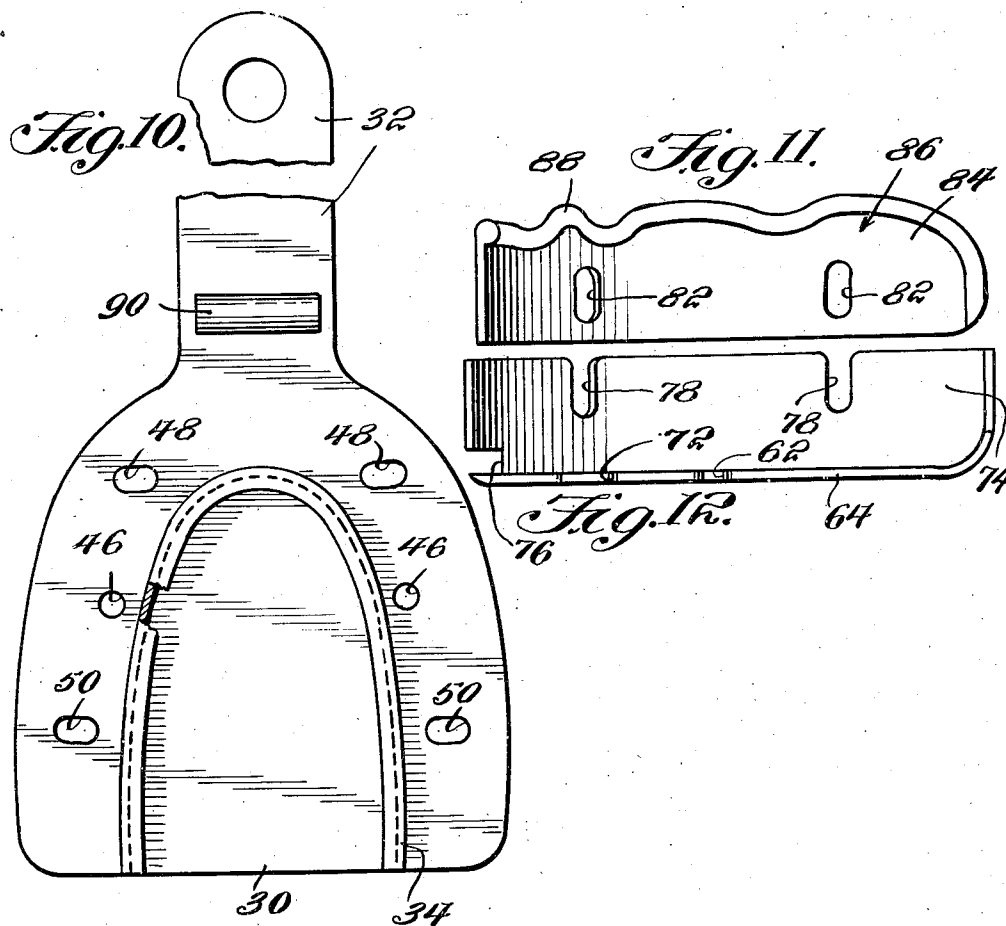
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UNITED STATES PATENT OFFICE

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COLLOID DENTAL TRAY

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5 Claims. (Cl. 32-17)

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This invention relates to a universal colloid dental tray for use by dentists in making casts or impressions of the mouth.

An object of this invention is to provide a device that will make it possible to secure a true anatomical impression of the human mouth, retaining the muscular attachments and the labial and buccal mucosa in their normal positions while taking an impression thereof.

Another object of this invention is to provide a device which by its construction permits the muscular attachments to assume their natural positions while the impression is being taken.

A further object of this invention is to provide a device which by its construction permits adjustability thereby securing anatomical adoption to the fold of the mucosa.

A still further object of this invention is to provide a device that will engage the alveolar ridge and thus insure a true relationship with the adjacent structure, namely the muscular attachments and mucous fold.

A still further object of this invention is to provide a device that can be adjusted to each individual case and permit adjustment for width and height insuring a more accurate impression and fitting of the mouth.

With these and other objects and advantages in view, the invention consists of the novel details of construction, combination and arrangement of parts more fully hereinafter described, claimed and illustrated in the accompanying drawings in which:

Figure 1 is a top plan view of an embodiment of the invention showing the upper tray assembled;

Figure 2 is a side view thereof;

Figure 3 is a sectional view on the line 3-3 of Figure 1 in position for taking an impression;

Figure 4 is the same adjusted for a larger impression;

Figure 5 is a sectional view on the line 5-5 of Figure 1;

Figure 6 is a sectional view on the line 6-6 of Figure 1;

Figure 7 is a top view of an adjustable side section of the tray;

Figure 8 is a front view thereof;

Figure 9 is a fragmentary view of the palatal section of the device;

Figure 10 is a plan view of the base of the upper tray;

Figure 11 is a side view of the height adjusting section for the upper base;

Figure 12 is a side view of the side section for the upper base.

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Referring more in detail to the drawings, the reference numeral 30 indicates the base of the upper tray which is adapted to make upper jaw impressions of a human mouth and is provided with a handle 32 for the efficient handling thereof.

The base 30 has a semi-elliptical groove 34 surrounding the medial portion thereof which is adapted to receive the flanged edge 36 of the palatal section 38. This section is removable and can be made in various sizes to fit the contour of the arch of the human mouth. A beading 40 formed on the section 38 provides for more efficient fitting thereof and a post dam 42 formed at the rear edge thereof has an inwardly inclined frontal edge 44 assuming the form of an inverted V. The post dam 42 is a flat, smooth surfaced projection which follows the contour of the palatal section 38. It is intended to indirectly exert a slight pressure upon the soft palate of the mouth, while taking an impression with a suitable impression material. It also keeps the impression material from down the patient's throat. When inserting the tray into the mouth, contact is made first with the back end of the tray, then the front end is pushed against the tissues. This carries the bulk of the impression material to flow forward, and if the post dam is not used, it will flow into the patient's throat. Therefore, the primary function of the post dam is to prevent gagging of the patient while taking an impression. Exerting a mild pressure upon the soft palate is highly desirable when taking an impression, and the post dam also insures better retention.

On each side of the groove 34 the base 30 is provided with opposed openings 46 and opposed elongated slots 48 and 50 respectively.

The slots 48 and 50 are adapted to receive the adjustable ridge contactors 52 which are T-shaped in cross section having the horizontal bar 54 for contact with the ridge A of the arch B of the human mouth. The vertical stem 56 is screw-threaded and by means of upper and lower knurled nuts 58 can be adjusted for height, the nuts 58 being positioned on the top and bottom of the base 30.

Set screws 60 positioned in openings 46 are adapted to be received in the elongated open slot 62 of the movable side section 64 and the forward ridge contactor 52 has its stem 56 receivable in the elongated closed slot 70 while the elongated open slot 72 is adjusted to receive the rear stem 56 of the ridge contactor 52 and thereby permit adjustment of the section 64,

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retention thereof being obtained by tightening nuts 61. There are two sections 64 one for each side of the base 30. With the use of movable side sections, the tray can be adjusted for various widths.

The outer contour of these sections conforms to the contour of the base 30 and the outer edge is provided with an upstanding flange 74. Slots 76 formed at the forward edge of the flange are provided to permit passage therein of the base 30 to permit proper adjustment thereof.

The flange 74 is provided with vertical relatively spaced open slots 78 which are adapted to receive set screws 80 which inserted in openings 82 in the depending side 84 of the height adjusting section 86 permits adjustment thereof for the height of the impression to be taken. The top edge of the section 86 is provided with a flange 88 which is notched as shown to accommodate the muscular attachments of the human mouth. The sections 86 are provided in pairs one for each side and the sections 64 slide on the bottom of the base 30 and the sections 86 are adjustable on the inner side of the sections 64 and are retained in adjusted positions by nuts 68 on the set screws 80.

Adjacent the meeting point of the front of the sections, the handle 32 is provided with a ribbed projection 90 which is adapted to secure the wax or compound used to make the impression. If a patient has a wide jaw, the set screws 60 will allow the movable side sections 64 to move outward and far apart, thus causing the front ends of sections 64 opposite projections 90 to move apart, and leave a large opening. To close this opening, wax or any other suitable material is applied to projection 90, to close the opening caused by movement of sections 64, and by moulding this wax to the shape of the sections 64, there is no break and the sections are continuous.

The device functions in the following manner, the base is placed with the mouth and the outer sections are adjusted to compensate for the thickness of the impression, the ridge contactors are adjusted, then the upper sections are adjusted for proper height or depth of the impression.

It is believed that the operation of the device will be apparent to those skilled in the art and it will be apparent that a device has been provided that is adjustable for various sizes of human mouths, thus eliminating the necessity of having on hand a large number of trays in order to find one suitable for each patient.

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It is to be also understood that modifications and changes in minor details of construction, combination and arrangement of parts may be resorted to without extending beyond the scope of the invention and the claims appended thereto.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A device of the character described, comprising a base, a semi-elliptical groove surrounding the medial portion of said base, a palatal section having a flanged edge, which is receivable in said groove, component side sections adjustably mounted on said base for relative movement to effect contraction or expansion for width and height after placement in a human mouth, and means for retaining the sections in fixed relation to each other after they have been properly adjusted to conform to the human mouth.

2. The invention as described in claim 1 wherein said base is provided with ridge contacting means for engagement with the ridges of the arch of the mouth.

3. The invention as described in claim 1 wherein a handle is provided on said base and means on said handle outwardly of said side sections for retaining impression making material on said base to close the gap between said sections after they have been adjusted.

4. A device of the character described, comprising upstanding component sections adjustably mounted on a base for forming a closed tray for retaining molding material for taking an impression of the human mouth, a semi-elliptical groove surrounding the medial portion of said base and a removable palatal section mounted on said base in said groove.

5. The invention as described in claim 4 wherein said palatal section is provided with a post dam at the rear thereof having an inwardly inclined outer edge to prevent the impression material from overflowing the tray to run down the patient's throat.

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REFERENCES CITED

The following references are of record in the file of this patent:

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