

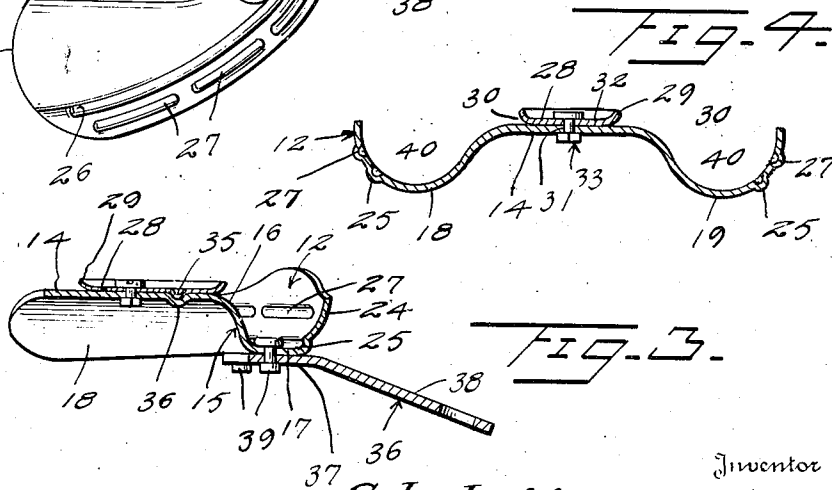
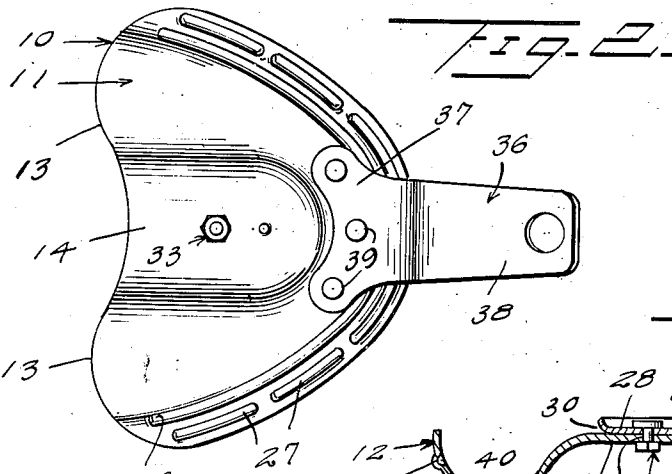
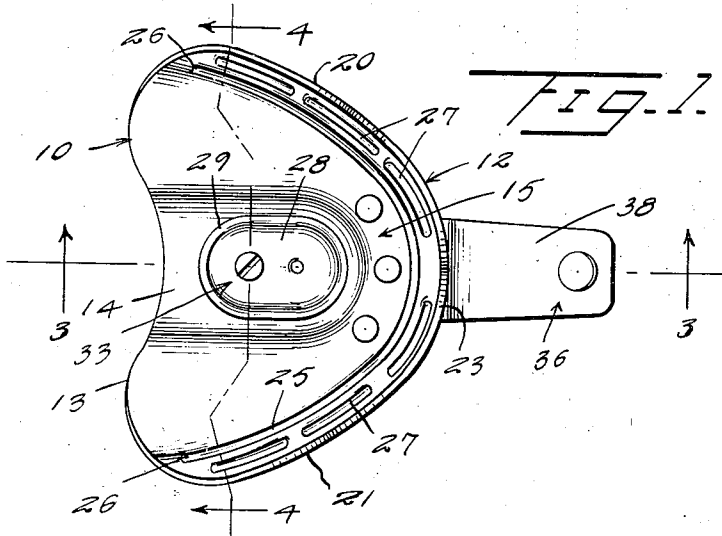
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IMPRESSION TRAY

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IMPRESSION TRAY

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1 Claim. (Cl. 32-17)

This invention relates to impression trays for use in the practice of dentistry.

The invention aims to provide, in a manner as hereinafter set forth, an impression tray having as the essential and underlying factors and features thereof, the provisions for retaining and holding the various impression materials after they have hardened and set in the mouth, or otherwise.

The invention further aims to provide, in a manner as hereinafter set forth, an impression tray having as the essential and underlying factors and features thereof, the provisions for retaining and holding the various impression materials after they have hardened and set in the mouth or otherwise, and with such provisions being disposed at that face of the tray at which the impression material bears against.

The invention further aims to provide, in a manner as hereinafter set forth, an impression tray having means for arresting the bodily shifting of the impression material relative thereto and for coupling the same material therewith.

The invention further aims to provide, in a manner as hereinafter set forth, an impression tray which is simple in its construction, strong, durable, compact, thoroughly efficient in its use, conveniently handled, readily assembled and comparatively inexpensive to manufacture.

Embodying the aims aforesaid and others which may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts as will be more specifically referred to and illustrated in the accompanying drawing, wherein are shown embodiments of the invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed:

In the drawing:

Figure 1 is a top plan view of an upper impression tray, in accordance with my invention.

Figure 2 is an inverted plan of the tray shown by Figure 1.

Figure 3 is a section on line 3-3 of Figure 1.

Figure 4 is a section on line 4-4 of Figure 1.

Each upper impression tray, to be hereinafter referred to, is of flared contour and of substantially semi-ovoidal form. Each upper tray is closed at its sides and front and open at its top and rear. Each upper tray gradually increases in width from its front to its rear.

Each lower impression tray to be hereinafter referred to will be of inverted channel shape, open at its bottom end and at its rear end. Each

lower tray will be flared from front to rear, and in top plan will be substantially of semi-ovoidal contour.

Each of the trays to be hereinafter referred to will be constructed from any suitable material, preferably light metal, such as aluminum. The description of each of the trays to be hereinafter described, will apply to the tray in the manner in which it is used, that is, as applied to the mouth of a person.

With reference to Figures 1 to 4, the upper impression tray shown thereby and indicated generally at 10, includes a bottom or base wall 11 and an upstanding continuous flange 12, which rises from the side and front edges of the bottom 11. The latter gradually increases in width from front to rear. The rear edge 13 of bottom 11 is of ogee curvature. The side edges of the bottom are curved and directed inwardly from the ends of the edge 13 to the ends of the front edge of the bottom. The said front edge is arcuate in form and merges at its ends into the forward ends of the side edges of the bottom. The bottom of each of the hereinafter referred to upper impression trays will have its edges accord with the shape of the edges referred to in connection with the bottom 11 of the tray 10.

The bottom 11 is formed with an elevated flat rear central portion 14 extending forwardly from the rear edge 13 to a point rearwardly from the front edge of said bottom 11. The latter includes a downwardly and forwardly extending front central portion 15 which, at its upper end, merges into the forward end of portion 14. The latter is of substantially rectangular form and has an arcuate forward end. The portion 15 is of angle-shape in cross section forming it with a vertical rear leg 16 and a lower horizontal leg 17 extended forwardly from the lower end of leg 16. The latter is of segmental contour in vertical section. The bottom 11 includes a pair of oppositely disposed side portions 18, 19 which depend from the sides of the rear central portion 14 and merge into the sides of the front central portion 15. The side portions 18, 19 are of like form and each in transverse section is of compound curvature.

The flange 12 forms the side walls 20, 21 and the front wall 23 of the tray. The flange 12 is of curved contour in vertical section and is directed outwardly and upwardly with respect to the bottom 11. The flange 12 has the central part of its front of reduced height, as at 24, with respect to the portions of the flange located adjacent said part 24. The bottom of the flange 12 merges into

the side portions 18, 19 and the front central portion 15 of the said bottom 11. At the point of mergence of the flange 12 with the bottom 11, there is provided a continuous groove 25 which opens into the interior of the tray. The groove 25 has closed ends 26 positioned in proximity to the edge 13. The flange 12 above and in proximity to the groove 25 is formed lengthwise thereof with a set of spaced inner endwise aligned closed end grooves 27 which open into the interior of the tray. The grooves 25 and 27 constitute provisions for preventing the impression material from slipping relative to the tray.

The rear flat elevated central portion 14 of the bottom 11 has correlated therewith a means for coupling the impression material to the said portion 14 and with such means acting to secure or couple the impression material in the tray. The said means may be integral with or detachably connected to the said bottom portion 14, and it is shown by way of example as being detachably connected to the tray bottom. The said means consists of an oval shaped plate 28 seated on and of less width and less length than said bottom portion 14. The marginal portion 29 throughout, of the plate 28, is upturned to form an endless groove 30 between the plate and said portion 14. The latter is formed with an opening 31. The plate 28 is provided with an opening 32 for registry with the opening 31. Extending through the registering openings 31, 32 is a removable holdfast device 33 for detachably connecting the plate 28 upon the portion 14 of the tray bottom. The holdfast device 33 consists of a small headed bolt or screw and a nut; the latter is to engage the lower face of portion 14. The head of the bolt is for seating against the upper face of plate 28. The plate 28 forwardly of the opening 32 therein is formed with a depending detent 34 which engages in a recess 35 formed in the upper face of the bottom portion 14 to provide for the proper alinement of plate 28 relative to portion 14, and to prevent the shifting of the plate 28 with respect to portion 14 when the holdfast device is extended through the openings 31, 32.

The construction of the plate 28 and its arrangement relative to bottom portion 14 provides for the plate overlapping and embedding in the impression material in a manner whereby such material will be coupled to the bottom of the tray.

When separating the the impression material or model from the tray, the nut of the holdfast device is removed from the bolt or screw and the plate 28 is carried, with the model and afterwards disconnected from the latter for future use.

The forward part of the bottom 11 of the tray 10 has secured to its lower face, an outwardly directed handle 36 consisting of a flared inner part 37 and a downwardly inclined apertured outer part 38 which constitutes a hand grip and is of greater length than the part 37. The latter is secured to the bottom 11 of the tray by the holdfast means 39.

The side portions 18, 19 of bottom 11, in connection with the forward central portion 15 of said bottom, coact to form a continuous channel 40 surrounding the raised rear central portion 14 of bottom 11. The channel 40 is open at each end. The ends of channel 40 are at the edge 13 of bottom 11.

Preferably the grooves 25, 27, detent 34 and recess 35 will be provided by swaging the tray body and the plate.

It is to be understood that the pockets, openings and grooves referred to are to receive portions of the impression material, to retain the latter in the trays. Although, as heretofore stated, the grooves in the base walls and flanges preferably will be formed from swaging the material of the body of the tray, yet, if a tray is constructed of a molded body, the said grooves will be simultaneously formed in such body when the latter is molded. When the grooves are formed in the flanges by swaging the material of the tray body they will extend outwardly on both the buccal and on the labial surfaces of the tray.

What I claim is:

In an impression tray of the type including a substantially semi-ovoidal-shaped receptacle-like body and including a base wall, said wall having the rear part of its central portion relatively flat and disposed above the remaining portion thereof; a coupling plate comprising a shallow cup-shaped outwardly opening member, said member including a relatively flat bottom and an upstanding marginal flange, said bottom contacting the central flat portion of said tray and said flange on the outer side thereof forming with the surface of said central flat portion a substantially V-shaped shank within which the impression material is adapted to engage, securing means passing through said plate and through said rear part of the central portion of said base wall, and means other than said securing means and spaced from the latter for positioning said plate on said body comprising a detent on said plate and a socket in said body, said detent being receivable in said socket.

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