

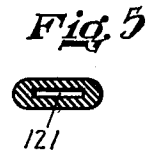
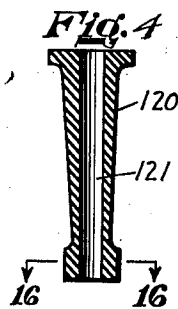
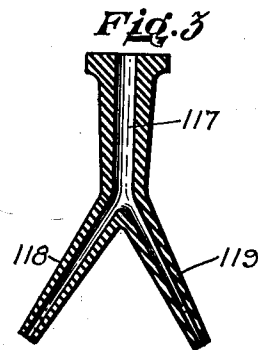
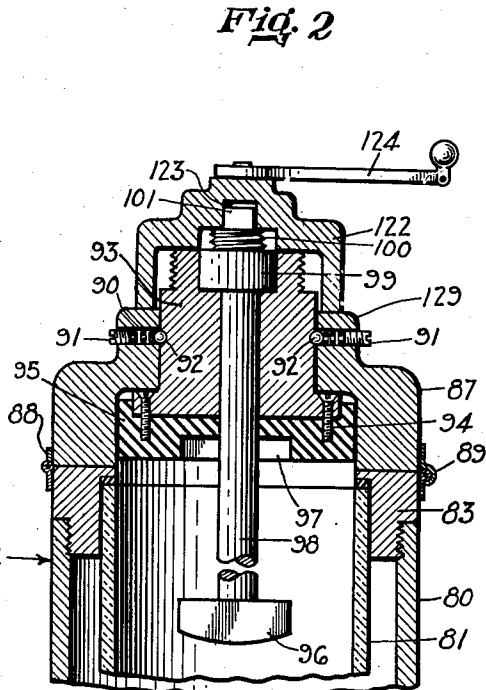
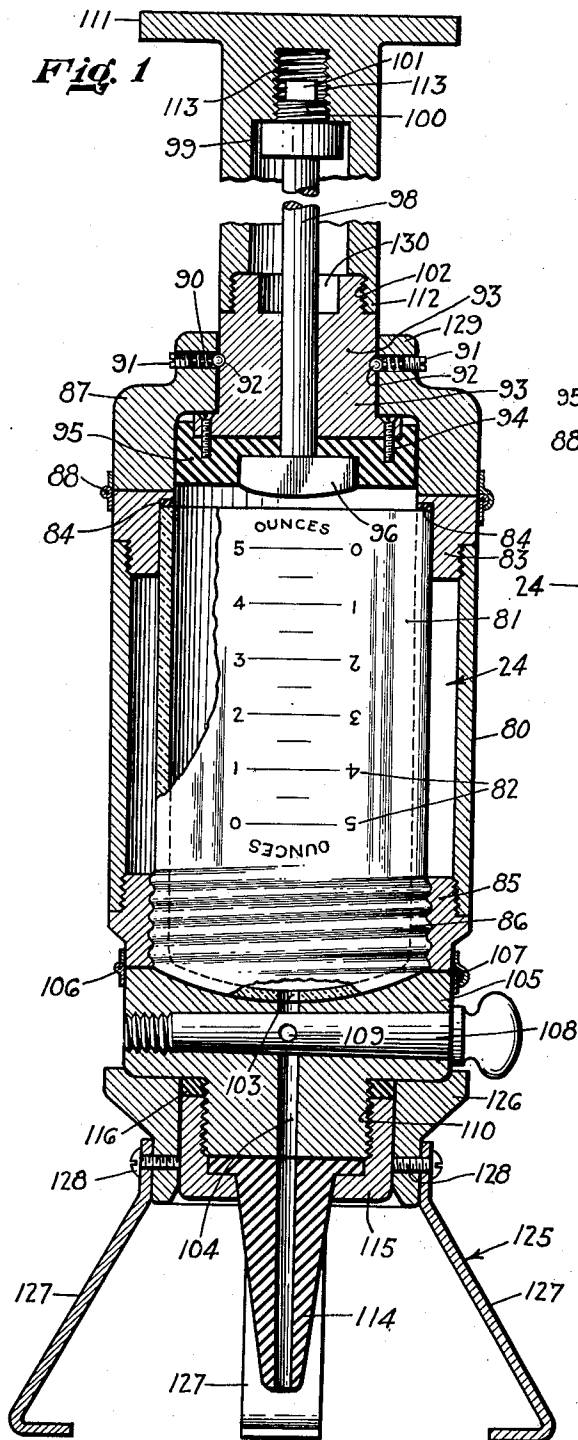
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DENTAL APPLIANCE

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DENTAL APPLIANCE

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2 Claims. (Cl. 259-47)

This invention relates to a dental appliance and refers more particularly to a device for measuring, mixing, ejecting of impression material.

An object of the present invention is the provision of an instrument which can be used for mixing and ejecting a material used in dentistry for making impressions, said instrument being inexpensive in construction and simple and reliable in operation.

Other objects of this invention will be apparent in the course of the following specification.

The invention will appear more clearly from the following detailed description when taken in connection with the accompanying drawing showing by way of example a preferred embodiment of the inventive idea.

In the drawing:

Figure 1 is a section through the syringe, some parts being shown in a side elevation.

Figure 2 shows a portion of the syringe when it is ready for mixing.

Figure 3 shows a nozzle in section.

Figure 4 shows a nozzle of a somewhat different type; and

Figure 5 is a section along the line 16-16 of Figure 4.

The syringe 24 shown in Figures 1 and 2 of the drawing comprises an outer casing 29 having two broad slots through which the inner glass cylinder 31 is exposed. As shown in Figure 1, the glass container or cylinder 31 is provided with the indicia 32 showing the amount of the material contained in the cylinder, and serving for proportioning the material.

The casing 29 is screwed upon a threaded portion of an upper flange 33, the inner surface of which carries a washer 34 used for supporting one end of the glass cylinder 31. A lower flange 35 is provided with an outer threaded portion which measures with screw threads provided upon the inner lower surface of the cylinder 31. The flange 35 is also provided with an inner threaded portion which is used for holding a correspondingly shaped lower portion 36 of the glass cylinder 31.

The cover 37 is connected by a hinge 38 and a lock 39 with the upper flange 33. The cover 37 is provided with a narrow horizontal bore hole within which a spring 39 is situated, which may be compressed by a set screw 41. A ball 42 is in engagement with the spring 39 and fits within a recess formed in a plunger 93, which is connected by the bolts 34 with a hard rubber head 95.

In the position shown of Figure 1 a stirrer 96, having the form of a narrow blade, is situated

within a correspondingly shaped recess 97, which is provided in the rubber head 95. The stirrer 96 is carried by a rod 98 which passes through another opening formed in the rubber head 95 and the plunger 93. The upper end of the rod 98 carries the head 99, a threaded portion 100 and a square end portion 101. The upper portion of the plunger 93 is provided with inner screw threads 102.

The lower end of the container 31 is provided with an opening 103 which is in alignment with a corresponding opening or passage 104 provided in the bottom closure member 105, which is connected by the hinge 106 and the lock 107 with the flange 35. The bottom member 105 carries a pet cock 108 having an opening 109 and used for interrupting and controlling the passage of the mixture through the channel or passage 104. The lower end of the closure member 105 is provided with screw threads 110.

As already mentioned, the syringe 24 may be used for the purpose of ejecting the casting material and may also be used as a mixer for that material. Figure 1 shows the syringe when it is ready for ejection, while Figure 2 shows it while it is being used as a mixer.

When the syringe is used for ejection, the plunger handle 111 is placed over the upper end of the rod 98, the threaded lower portion 112 of the handle 111 being screwed upon the threaded portion 102 of the plunger 93. The upper threaded portion 113 is threaded upon the screw threads 100 carried by the rod 98.

Nozzles of different forms may be affixed one after the other to the syringe 24 to suit individual requirements.

Figure 1 shows a short nozzle 114 which is connected with a syringe by a closure member 115 screwed upon the screw threads 110 of the bottom portion 105 and supported by the rubber washer 116.

Figure 3 shows a nozzle 117 having two V-shaped end portions 118 and 119.

Figures 4 and 5 show a nozzle 120 provided with a very narrow elongated passage 121.

Figure 2 shows the device when it is ready to be used as a mixer. In that case, the handle 111 is removed and a cover 122 is placed over the upper end of the rod 98 in such manner that the rectangular end 101 fits into a square recess 123 formed in the cover 122. The cover 122 is provided with a handle 124 which is firmly attached thereto.

As shown in Figure 1, the syringe 24 may be conveniently supported upon a stand 125 which

has an annular portion 126 supporting the bottom member 105 and enclosing the closure member 115. Legs 127 are firmly connected with the annular support 126 by the bolts 128.

5 The impression material may be introduced into the interior of the glass container 81, either by suction or upon opening the cover 87.

Then the mixing of the material situated within the container 81 takes place. For that purpose the syringe 24 is placed upon the support 125 and the plunger handle 111 is unscrewed and removed from the syringe. Then the cover 122 is placed over the upper portion of the rod 98 in such manner that its inner square recess 123 fits over the square end 101 of the rod 98. The casing 122 is moved downwardly until it rests upon the shoulder 129 of the cover 87. The rod 98 is thereby also moved downwardly until its end portion 99 fits into a recess 130 provided in the plunger 93. Then the operator may rotate the handle 124, and the cover member 122 and the rod 98 will be rotated along with it. The blade 96 which is now situated substantially in the middle of the glass container 81, will rotate along with its rod 98 and will thoroughly mix the material situated within the glass container 81.

When the impression material has been sufficiently mixed the cover 122 is removed, the mixing blade 96 is returned to its position in the recess 97 and then the handle 111 is screwed again upon the plunger 93 and the threaded portion 100 of the rod 98.

35 All the parts of the described device may be conveniently cleaned sterilized and are easily replaceable.

It is apparent that the specific illustrations shown have been given by way of illustration and not by way of limitation, and that the structures above described are subject to wide variations and modifications without departing from the scope of the invention. For example, this device may be used not only in connection with dental treatments, but also in sculpture, or in any other art in which castings or impressions are required. All of such variations and modifications

are to be included within the scope of the present invention.

What is claimed is:

1. A device for mixing and ejecting a material, said device comprising a container, an opening 5 formed in said container, a lower flange enclosing a portion of said container, a bottom member connected with said lower flange and having a passage formed therein which is in alignment with said opening, a valve carried by said bottom member for opening and closing said passage, said bottom member having a threaded portion, a nozzle having a passage formed therein and communicating with the first-mentioned passage, a nozzle support carrying said nozzle and engaging said threaded portion, an upper flange enclosing another portion of said container, a cover 10 connected with said upper flange, a plunger head movable within said container, a plunger connected with said plunger head and extending through an opening formed in said cover, releasable means carried by said cover for maintaining said plunger in a predetermined position, said plunger having a threaded portion, and a handle screwed upon the threaded portion of said 25 plunger.

2. A device for mixing and ejecting a material, said device comprising a container, an upper flange enclosing a portion of said container, a cover connected with said upper flange, a plunger 30 head movable within said container, a plunger connected with said plunger head and extending through an opening formed in said cover, releasable means carried by said cover for maintaining said plunger in a predetermined position, 35 a mixing blade movable within said container and fitting into a recess formed in said plunger head, a movable rod having one end connected to said mixing blade and extending through openings formed in said plunger head and said plunger, an angular end portion carried by the 40 other end of said rod, and a handle detachably and movably mounted upon said cover and having an angular inner recess, said angular end portion fitting into said recess.

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