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J. F. HARDGROVE
FINGER-SUPPORTED DENTAL TRAY

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Fig. 1

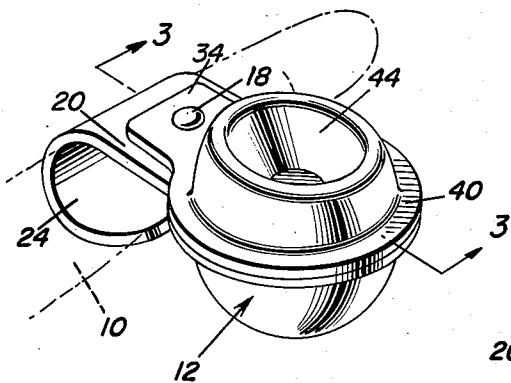


Fig. 2

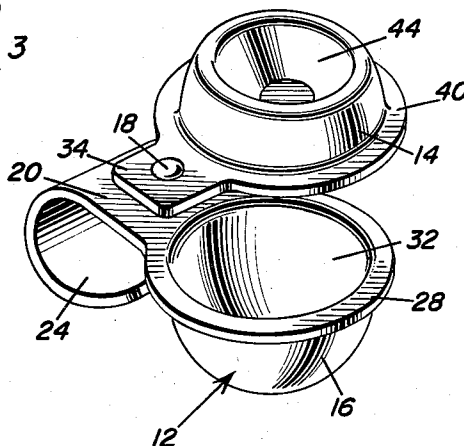


Fig. 4

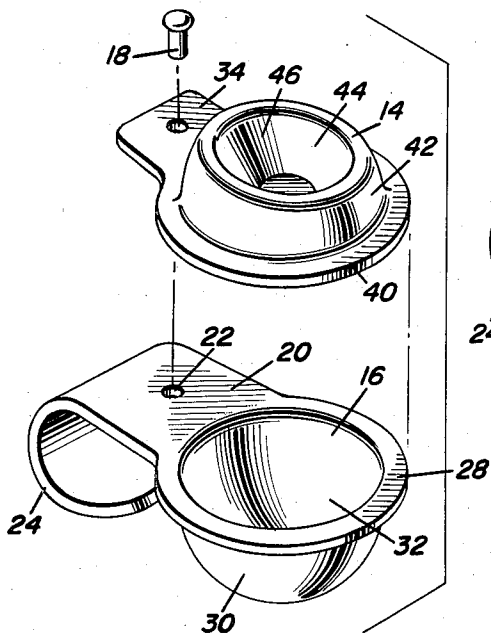
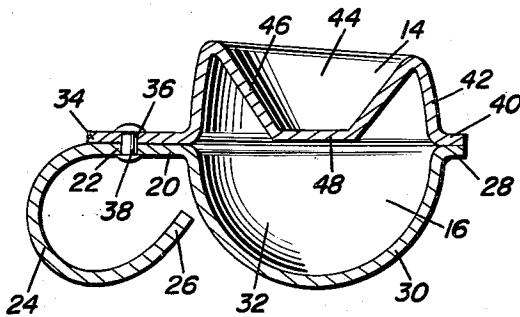


Fig. 3



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FINGER-SUPPORTED DENTAL TRAY

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7 Claims. (Cl. 32—1)

This invention relates to a dental tray.

An object of the invention is to provide a finger-supported compartment tray to transport and act as a sterile receptacle and container for plastic filling materials, dental cleaning compounds, medications and other substances in connection with the practice of dentistry.

In order to reduce the operator's fatigue and improve efficiency by eliminating twisting and turning from the patient by having material on the operator's finger adjacent to the mouth of the patient, the tray in accordance with this invention has been developed. It prevents liquids and other substances from being dropped on the patient when being carried from a place remote from the mouth of the patient. The invention further provides a dental finger aid which is simple in design and construction, light in weight, and which will not interfere or obstruct the free movement of the operator's hands.

The dental tray furnishes the above conveniences by means of a tray which is supported on the finger by means of a ring anatomically designed to anchor securely without tilting on the finger of the operator and which may be made to fit any size finger by the simple adjustment entailing enlarging or contracting the ring.

A very important feature of the invention is that the tray provides the user with two compartments, one of which forms a closure for the other. Consequently, it is evident that the two compartments are maintained isolated from each other so that they may be used for individual and separate substances.

Although there have been prior ring trays for dental use, it is believed that this ring tray is unique, furnishing the operator with two distinct compartments.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawing forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of a tray showing it attached to one finger of a user;

Figure 2 is a perspective view of the tray showing the compartments in the open position;

Figure 3 is a sectional view taken on the line 3—3 of Figure 1; and

Figure 4 is an exploded perspective view of the parts of the tray.

In the accompanying drawing reference is made to Figure 1 wherein there is shown a finger 10. Although the tray may be worn on any finger that would best suit the operator's technique, it is suggested for good results that it be worn on the third or distal finger, middle segment, left hand, with the bottom portion of the tray facing the palm side of the hand. The tray may also be worn with the top compartment completely open, facing the outside of the hand and the lower compartment on the palm side of the hand or in open position on the index finger. In these positions, the contents of either compartment may be brought close quickly to the

patient's mouth. Tray 12 is made of only three parts as shown in Figure 4. There is an upper compartment forming part 14, a lower compartment forming part 16, and a pivot 18 connecting the parts together for pivotal movement. The lower compartment forming part 16 has a flat plate 20 in which there is an aperture 22. An anatomically designed finger ring 24 is operatively connected with, e.g. made integral with, plate 22. It is curved to fit comfortably on the upper side surface of the finger, and is adjustable to fit any size of finger. Ring 24 is made of a smooth approximately semi-circular continuation of plate 20, extending downwardly therefrom, and has an end portion 26 deviating from a true semi-circle by protruding as a straight continuation of the approximate semi-circle. This construction is shown in cross-section in Figure 3 and is referred to for a clear understanding of the cross-sectional shape of ring 24.

The lower compartment forming part 16 has a ring 28 formed integral with the edge of plate 20 opposite to that edge which has finger ring 24 connected thereto. The ring 28 has a downwardly extending bowl 30 integral therewith and which forms compartment 32.

Compartment forming part 14 has a plate 34 equipped with an aperture 36. The apertures 36 and 22 are aligned, and a pivot pin 38 is placed therein. This pivotally connects part 14 with part 16.

Part 14 has a ring 40 integral with one edge of plate 34 and it is of the same diameter as ring 28 so that it fits flush thereover when the compartment forming parts 14 and 16 overlie each other (Figure 3). There is an upwardly and inwardly extending approximately spherical segment wall 42 integral with the inner edge of ring 40, and it has an upwardly opening bowl 44 depending from the upper edge thereof. Bowl 44 has a truncated conical side wall 46 and a flat lower wall 48 at the smaller diameter part of the truncated conical wall 46. This completes the structure of tray 12 exemplifying the invention. In use, the finger ring 24 is placed on the finger as aforesaid. Then there is available to the dentist or other user, two compartments 44 and 32 in the upper and lower parts of the tray. The compartment 16 has its top closed by the presence of part 14. A simple maneuver (Fig. 2) laterally and pivotally displacing the part 14 with respect to part 16 is all that is necessary to open compartment 32. Both compartments may be used to support any and all substances capable of being used, from a practical standpoint, to advantage.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A finger-supported dental tray comprising an adjustable finger ring, a first compartment-forming part connected with said finger ring and having an upwardly opening bowl that forms the first compartment, a second compartment-forming part pivotally related to said first compartment-forming part and constituting a closure for said first compartment.

2. The combination of claim 1 wherein said finger ring is anatomically shaped and adjustable to fit various sizes of fingers.

3. A finger-supported dental tray comprising an adjustable finger ring, a first compartment-forming part connected with said finger ring and having an upwardly opening bowl that forms the first compartment, a second

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compartment-forming part pivotally related to said first compartment-forming part and constituting a closure for said first compartment, said second compartment-forming part having an upwardly opening bowl therein whereby the second compartment opens upwardly as does said first compartment.

4. In a finger-supported dental tray which has a finger ring, a plate connected with said finger ring, an upwardly opening bowl connected with said plate and having an upper edge essentially coplanar with said plate, a second upwardly opening bowl, means pivotally securing said second bowl to said plate, and said second bowl being movable to positions at which it overlies said first bowl and uncovers said first bowl.

5. The tray of claim 4 wherein said second bowl has a plate protruding therefrom and within which said means pivotally relating said bowls to each other are connected.

6. A finger-supported dental tray comprising a first

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bowl forming a compartment, a plate extending from an edge of said bowl, an adjustable finger ring connected with said plate and laterally spaced with reference to said bowl, a cover for said bowl and pivotally connected to said plate, said cover having an upwardly opening second compartment-forming bowl therein.

7. The dental tray of claim 6 wherein said finger ring is anatomically designed and shaped to fit on the upper side surface of the finger in a manner to prevent tilting.

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References Cited in the file of this patent

UNITED STATES PATENTS

538,110	Hellings -----	Apr. 23, 1895
2,080,210	Mafra -----	May 11, 1937
2,357,697	Slater -----	Sept. 5, 1944
2,665,479	Weldon -----	Jan. 12, 1954