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AMALGAM CARRIER, DISPENSER, AND CONDENSER

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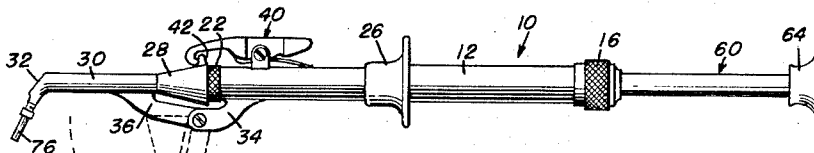


FIG. 1

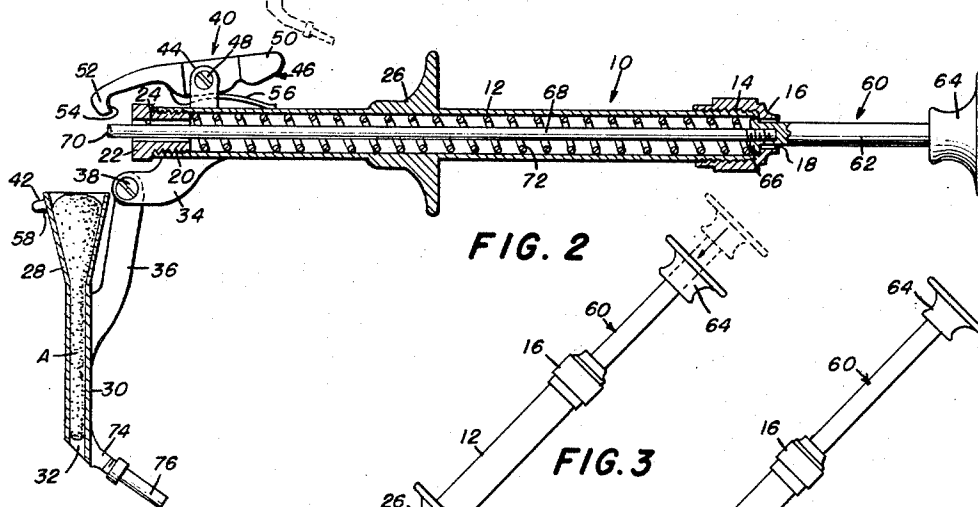


FIG. 2

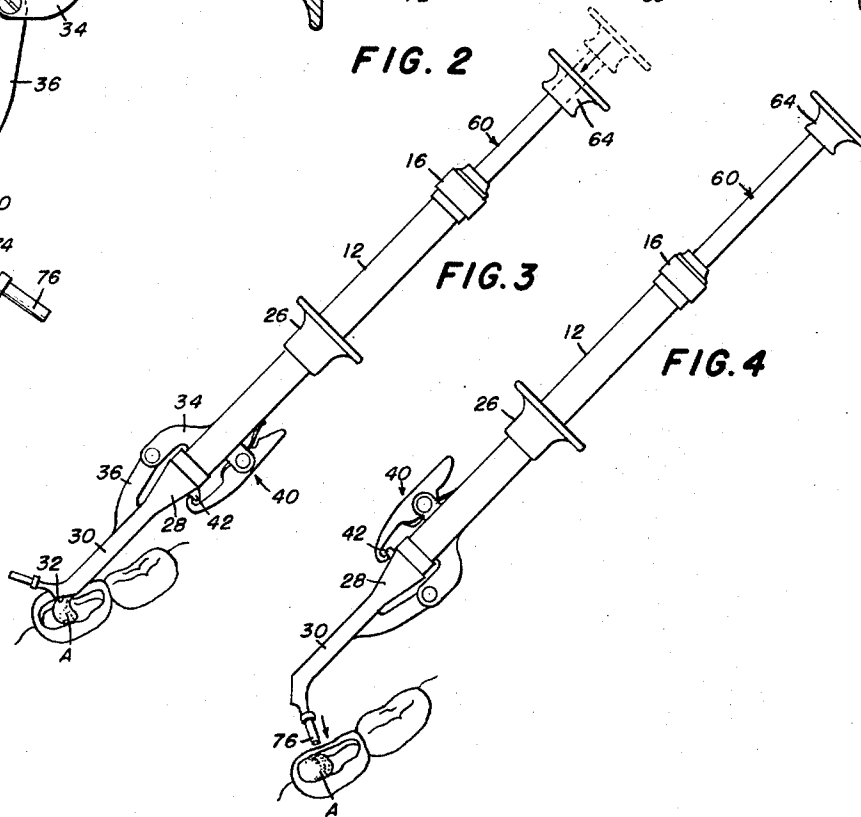


FIG. 3

FIG. 4

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AMALGAM CARRIER, DISPENSER, AND
CONDENSER

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2 Claims. (Cl. 32—60)

This invention relates to an amalgam carrier, dispenser, and condenser. More specifically, this invention relates to an amalgam carrier adapted to carry a sizable quantity of amalgam and provided with means for dispensing it accurately in measured quantities at the point desired. Near the dispensing outlet of the carrier, is provided a condenser by which the deposited amalgam can be compacted into the dental cavity.

By my invention, a large amount of amalgam can be loaded quickly and efficiently into the supply chamber of my device so that it is not necessary to repeatedly fill it for a single patient.

It is, therefore, an object of this invention to provide an amalgam carrier and dispenser adapted to be quickly loaded with a large quantity of amalgam or other dental filling material in plastic state so that it is not necessary to load the device again for a single patient.

It is a further object of this invention to provide a dental amalgam carrier which can be loaded and snapped shut to be held by a simple and quick-operating locking means.

It is a further object of this invention to provide a dental amalgam carrier and dispenser having condensing means adjacent the dispensing outlet thereof so that it is possible to compact the filling without changing instruments after dispensing amalgam.

A further object of this invention is to provide a dental amalgam carrier, dispenser, and condenser, which is inexpensive to manufacture, sturdy in structure, and extremely easy to operate.

This invention embodies other novel features, details of construction and arrangement of parts which are hereinafter set forth in the specification and claims and illustrated in the accompanying drawings wherein:

Fig. 1 is a side view showing the alternate open position of the supply chamber in phantom;

Fig. 2 is an enlarged side view of the device with the supply chamber in open disposition and filled with dental amalgam. The view is taken partly in section down the axis of the device;

Fig. 3 shows the invention in use dispensing an amount of amalgam into a prepared tooth. The plunger is shown slightly depressed as it would be in actual use; and

Fig. 4 shows the invention in use as a condensing device.

Briefly, my invention is a dispenser for amalgam or other dental filling material in the plastic state comprising a tubular barrel having hingedly connected at one end thereof a supply chamber with a discharge port. A plunger is reciprocable within the tubular barrel and adapted to be reciprocated into said supply chamber to force filling material out of the chamber through the discharge port. A novel and ingenious hinge and latch arrangement is provided between the supply chamber and the barrel for convenient and ready loading of the chamber.

Referring more specifically to the drawings, the invention is indicated in Fig. 1 by the numeral 10. It com-

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prises a tubular barrel 12 threaded exteriorly at the rear end as at 14 and receiving there an interiorly threaded thimble 16 having a central aperture 18. The forward end of the barrel is interiorly threaded as at 20 and receives a reduced threaded fitting 22 having a central bore 24 therein. Intermediate its ends, the barrel is provided with a finger collar 26 or ring adapted to serve as a gripping piece in dispensing. The collar is rounded on its forward side to provide comfortable gripping. Hingedly connected to the forward end of the tubular barrel is a funnel-shaped supply chamber 28. The chamber 28 is provided with a long snout 30 which is cut off at an oblique angle to the axis thereof as at 32. Hinge means connecting the tubular barrel and the funnel-shaped supply chamber comprise a pair of hinge plates 34 and 36. The hinge plate 34 is rigidly secured to the peripheral surface of the tubular barrel 12 and is disposed radially thereto. It is somewhat arcuate in shape and is apertured at its end. The hinge plate 36 is secured to the snout 30 of the funnel-shaped supply chamber 28 and extends upwardly to a point slightly above the larger end of the chamber where it is apertured. The apertures in the plates 34 and 36 are aligned and receive a pin or screw member 38 which pivotally relates them.

Adapted to secure the supply chamber against the forward end of the tubular barrel is the latch means 40 and the keeper means 42. The latch comprises a yoke 44 secured at its bight to the outer surface of the tubular barrel 12 and having its legs extending upwardly therefrom in a direction approximately opposite to the direction of the plate 34. The legs are apertured near their ends. A latch hook means is provided and includes the lever member 46 which is pivoted by pin 48 extending between the legs of the yoke 44 through the apertures in the legs of the yoke 44 and through a hole near the center of the lever 46. The rear end 50 of the lever 46 is enlarged and may be knurled on its upper surface to provide a suitable operating surface. The forward end is formed with a hook 52 having an inwardly and downwardly curved nose and an inwardly curved keeper-engaging inner surface 54. Secured to the underside of the latch lever toward the forward end of the lever from its fulcrum is one end of a flat spring 56. The other end of the spring engages the barrel 12 under the lever 46 and biases the latch means in the closed position. The latch keeper means 42 comprises merely a lug having a flat front wall 58. It is secured adjacent the lower end of the funnel-shaped supply chamber. Thus, as is best shown in Fig. 1, when the supply chamber is hinged up so that its larger end abuts the forward end of the tubular barrel, the hook on the latch means 40 snaps over the latch keeper means 42 and the flat surface 54 of the hook engages the far surface 58 of the lug 42, securing the supply chamber 28 against the barrel 12.

Reciprocable within the tubular barrel 12 is a plunger 60 comprising a shank 62 longitudinally extending through the aperture 18 in the thimble 16 and having on one end an operating button 64 and on the other end an enlarged area 66 adapted to serve as a rearward stop as it abuts the thimble 16. The forward end of the shank is axially drilled and tapped and receives a stem 68. The stem 68 extends from the shank 62 to a position forward of the forward end of the barrel 12 and extends through the bore in the threaded reduced fitting 22. Its forward end 70 is concaved and it is small enough in diameter to fit inside the snout 30 of the funnel-shaped supply chamber when the button 64 is depressed. A helical spring 72 biasing the plunger 60 to the rearward position is disposed about the stem 68 and within the tubular barrel 12 and has its forward end abutting the rearward end surface of the threaded fitting 22 and its rearward end abutting the enlarged area 66 in the shank

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62. Thus, as the button 64 is depressed, the spring exerts a force against the depression.

Mounted on the underside of the snout 30 of the funnel-shaped supply chamber 28 is a stud 74 disposed radially to the snout and inclined slightly forwardly, as shown in Fig. 1. The distal end of the stud 74 is threaded exteriorly, and it receives an inferiorly threaded condenser head 76 in threaded engagement. The condenser head 76 is selected from heads of different sizes and one may be removed and replaced with another of different size as the dentist desires. Thus, it is not necessary after the dentist has deposited amalgam in the filling to change tools to a condenser. Instead, he merely rotates the carrier over so that its condenser head 76 may be used to compact the filling.

The operation of my invention should be obvious from the drawings. As shown in Fig. 2, when it is desired to load the supply chamber, it is unlatched and pivoted downwardly for "breech" type loading. A large quantity of amalgam A may be then inserted into the funnel-shaped supply chamber 28. The chamber is then snapped against the barrel 12, and the plunger button 64 may be depressed to discharge an amount of amalgam into the hole in the prepared tooth as desired.

While this invention has been shown in but one form, it is obvious to those skilled in the art that it is not so limited but is susceptible of various changes and modifications without departing from the spirit and scope of the claimed invention.

I claim:

1. A dispenser for dental filling material in plastic state comprising a tubular barrel having a funnel-shaped

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supply chamber hingedly secured to the forward end thereof, said funnel-shaped supply chamber having a large end and a small end, the small end comprising a cylindrical tubular discharge snout having in the opposite end of the supply chamber from the large end an opening beveled off with respect to the axis of the cylinder, said funnel-shaped supply chamber adapted to hinge to rest in a closed position with its large end covering the forward end of said barrel and adapted to hinge to an open position exposing the large end for loading with such dental filling material, latch means secured to said barrel and adapted to releasably secure said supply chamber in said closed position, rigid plunger means disposed along the axis of said barrel and terminating in operating means, the end of the plunger inside said barrel being of lesser transverse dimension than the inside of the discharge snout of said supply chamber whereby when said supply chamber is in said closed position, depression of the operating means causes the end of the plunger inside said barrel to extend into the supply chamber and into the discharge snout to force such dental filling material out the small end of said supply chamber.

2. A dispenser for dental filling material in plastic state as described in claim 1 wherein the end surface of said plunger inside said barrel is concave.

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