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AMALGAM CARRIER CONDENSER ATTACHMENT

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Fig. 1.

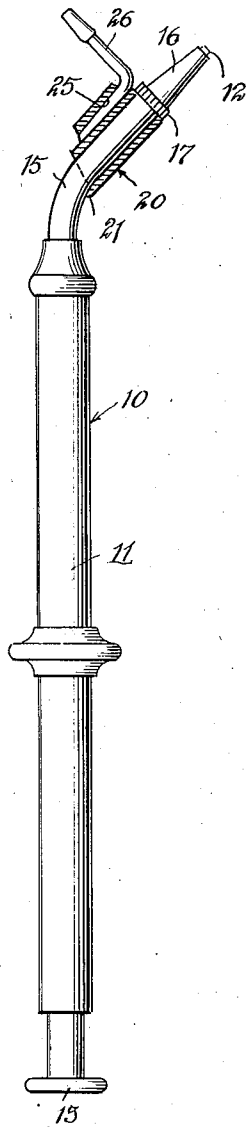


Fig. 2.

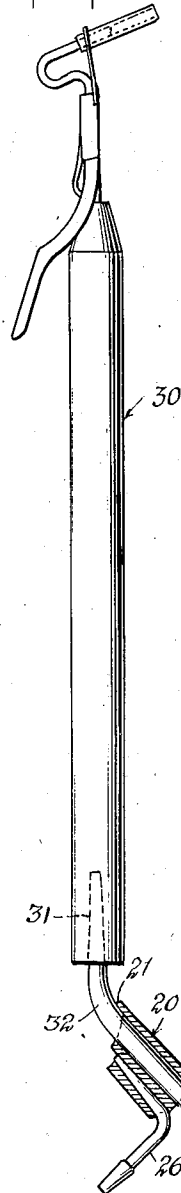
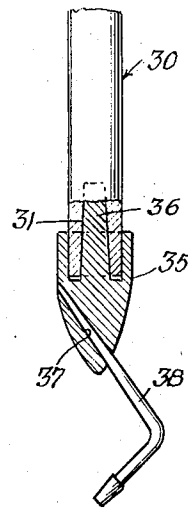


Fig. 3.



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## AMALGAM CARRIER CONDENSER ATTACHMENT

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2 Claims. (Cl. 32-60)

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This invention relates to a condenser attachment adapted for application to conventional amalgam carriers.

The principal object of this invention is the provision of a condenser attachment which may be mounted on a conventional amalgam carrier to enable said carrier to function as a condenser or plugger in addition to functioning as a carrier of amalgams. Excessive time consumed while packing a test specimen or dental cavity will be detrimental to best physical properties of the amalgam, and it is therefore quite inconvenient to have to substitute a conventional condenser or plugger for the amalgam carrier to do the work of condensing the amalgam in the tooth. The present invention renders it possible to use the amalgam carrier itself as the condenser, thereby saving time between amalgam depositing and condensing operations, and affords more time for the assistant to express more mercury each time from the amalgam.

Another object of this invention is the provision of a condensing attachment for use in connection with amalgam carriers, in which the condensing instrument or plugger is interchangeable to enable the same tool to be used with condensers of different size and contours.

Preferred embodiments of this invention are shown on the accompanying drawing in which—

Fig. 1 is a side view of a conventional amalgam carrier in which the plunger button is located at one end thereof, showing the condenser attachment mounted at the opposite end thereof, said attachment being shown in section;

Fig. 2 is a view similar to that of Fig. 1 of a second type of amalgam carrier, the condenser attachment being shown mounted at that end of the barrel which corresponds to the plunger button end of the first type of amalgam carrier; and

Fig. 3 is a fragmentary view, partly in section, showing a third type of condenser attachment adapted to be used in connection with an amalgam carrier such as is shown in Fig. 2.

Referring now to Fig. 1 of the drawing, it will be seen that a conventional amalgam carrier 10 is shown having a barrel 11, a plunger 12 and a plunger button 13. It will be noted that the barrel 11 is connected to a goose neck type of extension piece 15 which carries the operative end of plunger 12. This goose neck enables the instrument to reach what would otherwise be inaccessible parts of the mouth and more particularly some of the molars. At the operative end of goose neck 15 is a nozzle-shaped attach-

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ment 16 which is screwed to the goose neck 15 and which cooperates with plunger 12 in collecting the amalgam and depositing it in the cavity. This nozzle-shaped piece 16 is detachable from the goose neck 15, and it may be removed for cleaning or other purposes. It has a knurled portion 17 to facilitate removal thereof and re-engagement thereof with the goose neck 15. Thus far the instrument described is conventional in every respect.

The condenser attachment 20 is shown in section in Fig. 1. It will be apparent from said Fig. 1 that this attachment is adapted to fit on to the goose neck 15. It comprises a small fitting which has a cylindrical hole formed therein, the cross-sectional dimensions of the hole corresponding to the cross-sectional dimensions of that part of the goose neck 15 which it is shown to engage in Fig. 1. Attachment 20 is slidably mounted on goose neck 15 so that it may be attached thereto and removed therefrom at will. The end 21 of said attachment 20 engages the inside curve of goose neck 15 to prevent said attachment 20 from rotating on said goose neck. The nozzle-like member 16 engages the forward end of said attachment 20 and prevents axial movement thereof in a forward direction. The curved portion of goose neck 15 which end 21 of attachment 20 engages, prevents axial movement of said attachment in the opposite direction. Hence, when the attachment is mounted on the goose neck, as shown in Fig. 1, it is held tightly in place thereon as though it were an integral part of goose neck 15 and of the instrument as a whole.

The attachment 20 is also provided with a tapered hole 25 which is substantially parallel to the hole which accommodates the goose neck 15. Removably mounted in said tapered hole 25 is a condenser or plugger 26. It will be noted in Fig. 1 that this plugger is substantially L-shaped, its top end being provided with a hammer or tamping head which in every respect is conventional. Its opposite end is tapered slightly to conform to the taper of hole 25 so that when said end is slipped into said tapered hole a snug fit is therein provided. Neither the tapered hole nor the tapered end of condenser 26 is circular in cross-section, so that swivel or pivotal movement of said condenser with respect to said tapered hole 25 is prevented. Reference to Fig. 1 will disclose the fact that the operative end of the head of condenser 26 lies substantially on the longitudinal axis of barrel 11 of the amalgam carrier.

A different type of amalgam carrier 30 is shown in Fig. 2, but it will be noted that the same attachment 20 may be mounted thereon. Amalgam carrier 30 has no plunger button or any other type of actuating means corresponding to plunger button 13 of amalgam carrier 11 located at its non-operative end. Instead, a small hole 31 is formed in said end of amalgam carrier 30 and said hole has heretofore had no specific function. To adapt amalgam carrier 30 for use in connection with condenser attachment 20, an adapter 32 is provided which has a goose neck-shaped member, one end of which may be removably mounted in hole 31 of amalgam carrier 30. The opposite end of said adapter 32 corresponds to that portion of goose neck 15 on which attachment 20 is shown to be mounted in Fig. 1. Hence, said attachment may also be mounted on said adapter and this is shown in Fig. 2. The end 21 of said condenser attachment engages the inside curve of adapter 32 and the attachment 20 is thereby prevented from turning on said adapter. Attachment 20 need not be detachably mounted on adapter 32, although it may be so mounted, if desired. In view of the fact that adapter 32 is itself removably mounted in hole 31 of amalgam carrier 30, the entire unit or assembly, that is, the adapter 32 together with the attachment 20 may be attached to amalgam carrier 30 or detached therefrom at will. On the other hand, if it is desired to use said attachment 20 in connection with both types of amalgam carrier, it should preferably be detachably mounted on adapter 32.

The second embodiment of this invention as applied primarily to an amalgam carrier 30 such as is shown in Fig. 2, is disclosed in Fig. 3. Here the adapter 32 is omitted and a different type of condenser attachment 35 is employed. This attachment is a cap shaped affair which is adapted to slip over the end of the barrel of amalgam carrier 30. It has a downwardly extending axially aligned projection 36 which is adapted to fit into the hole 31 of the barrel of amalgam carrier 30. In other words, an annular groove is formed in attachment 35 which accommodates the annular end of the barrel of amalgam carrier 30 and the centrally extending projection of attachment 35 extends into the hole 31 of said barrel. The projection 36 engages the inner wall of the barrel, and the cap-shaped portion of attachment 35 engages its outer wall. In this manner a tight fit is provided between the attachment 35 and the amalgam carrier 30. It must be remembered, however, that the attachment 35 should preferably be removable with respect to the amalgam carrier, so that it may be mounted on or removed from a standard amalgam carrier of the type shown in Fig. 2.

Attachment 30 has a tapered hole 37 formed therein which corresponds to the tapered hole 25 of attachment 20. It is a flattened wedge shaped type of hole which accommodates condenser 38 in precisely the same manner as does the corresponding hole 25 in attachment 20 accommodate condenser 26. It will be noted that the tapered shank of condenser 38 is somewhat longer than the tapered shank of condenser 26. This is needed to position the head of condenser 38 on the longitudinal axis of the barrel of amalgam carrier 30.

The foregoing is a description of preferred forms of this invention, and it will be clearly

understood that the invention may take other forms equally as well. The precise shape of the condenser attachment is not critical except that it should be adapted for mounting on a conventional amalgam carrier. The precise shape of the condenser proper is not critical, except that when it is mounted by means of the condenser attachment on the amalgam carrier, its position and shape relative to the amalgam carrier which now becomes its handle should in all respects be conventional. Although the shank of the condenser is shown in the drawing to be of wedge shape, it may assume other shapes to prevent the condenser from rotating in its holder which, in the invention under discussion, is the condenser attachment. The shank may be provided with any shape other than a cross-sectional circular shape for this very purpose. The head of the condenser may be shaped differently from the shape shown in the drawing, and it may be made larger or smaller. Here, too, the conventions and standards of the profession should govern. The material of which the condenser holder or attachment should be made is not critical and the same material which is now used in the making of condensers may be used in this connection equally as well.

I claim:

1. A condenser attachment for an amalgam carrier, said attachment comprising a condenser holder and a condenser removably mounted on said holder, said holder having a sleeve portion formed therein which slips over one of the ends of the amalgam carrier, means being provided to prevent rotation of said holder on said amalgam carrier, said condenser comprising an L-shaped member having a condensing head formed at one end thereof and a wedge-shaped portion formed at the opposite end thereof, said condenser holder being provided with a wedge-shaped hole formed therein which accommodates said wedge-shaped end of the condenser, the operative head of said condenser being positioned on a line which coincides with the longitudinal axis of the amalgam carrier.

2. In a device of the class described, an amalgam carrier having a goose neck end, a condenser attachment for said carrier comprising a condenser holder which is removably mountable on said goose neck end, said holder being provided with a projection which engages the inner curve of said goose neck end to prevent rotary movement of said attachment on said goose neck end, a nozzle-shaped tip to be screwed to the operative end of said amalgam carrier for engagement with the end of said condenser attachment to hold said attachment in place on the goose neck portion of the amalgam carrier, said attachment including a condenser which is removably mounted thereon and which is bent to position its operative end on a line coinciding with the longitudinal axis of the amalgam carrier.

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