May 25, 1954 C. S. IVORY, JR 2,679,102

AMALGAM CARRIER

Filed July 16, 1953

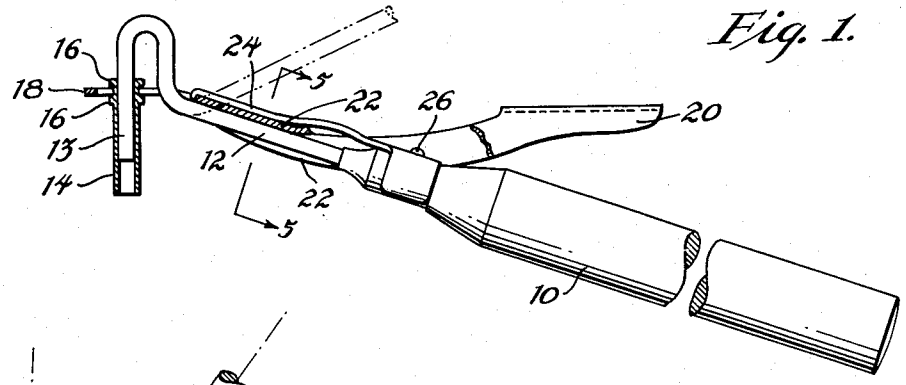


Fig. 1.

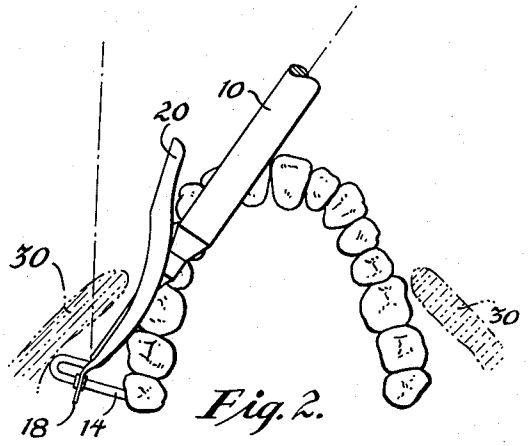


Fig. 2.

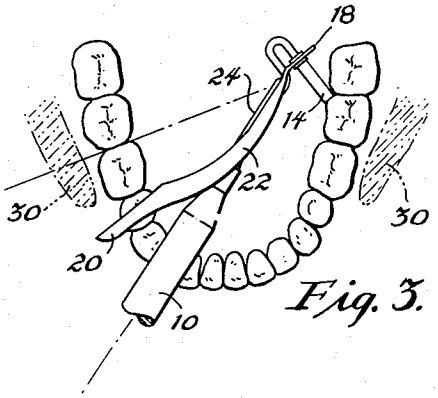


Fig. 3.

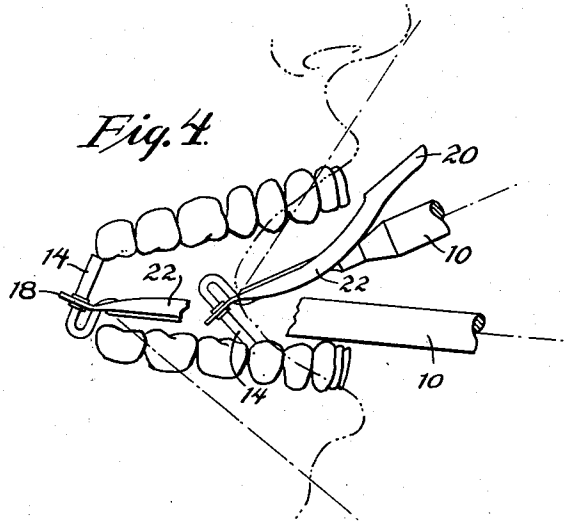


Fig. 4.

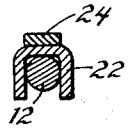


Fig. 5.

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AMALGAM CARRIER

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Application July 16, 1953, Serial No. 368,335

1 Claim. (Cl. 32—60)

1

My invention relates to a combined amalgram carrier and applicator of the general type disclosed in Patent No. 2,503,156, issued to Chester S. Ivory, on April 4, 1950.

One object of the invention is to produce an improved amalgam carrier and applicator of the type set forth.

The device of the prior patent is, and has been, in extensive use and is quite satisfactory for most uses. However, the structure of the prior device is such that when it was used in the filling of a cavity in a distal wall of a more or less inaccessible tooth, the mouth of the patient had to be opened very wide with consequent discomfort to the patient and embarrassment to the dentist.

It is therefore a further object of this invention to produce an improved device which can be used on all walls of all teeth without inordinately opening the mouth of the patient and without the necessity of contortions on the part of the dentist.

The full nature of the invention will be understood from the following specification and the accompanying drawings, in which:

Fig. 1 is a view, partly in side elevation and partly in vertical section, of an amalgam carrier and applicator embodying my invention.

Fig. 2 is a diagrammatic plan view showing the new device in use in the fitting of a cavity in the outer side wall of a rear molar or wisdom tooth in the upper or in the lower jaw.

Fig. 3 is similar to Fig. 2 but showing the device in use on the inner wall of a rear, relatively inaccessible tooth.

Fig. 4 is a diagrammatic side elevational view showing the use of the device on the rear wall of an upper molar and on the rear wall of a lower tooth.

Fig. 5 is an enlarged fragmentary vertical sectional view showing details of construction.

The device shown in Fig. 1 includes a handle 10 to one end of which is secured a reduced portion 12 which is bent into an inverted U shape as best shown at the left end of Fig. 1. The free-limb 13 of the U slidably carries a sleeve 14 adapted to contain the amalgam. The sleeve 14 is provided with spaced flanges 16 forming a groove therebetween. This groove is adapted to be engaged by the slotted end 18 of an actuating lever which also includes an operating handle 20. The intermediate portion 22 of the actuating lever is of an inverted U shape in cross section with the bight of the U resting on, and with the limbs of the U engaging the sides of, the reduced portion 12. The manner in which this is accomplished is clearly shown in Figs. 2 and 3 of the aforesaid prior patent.

2

The end portion 18 of the handle is depressed into and maintained in the lower position of Fig. 1 by means of a spring 24 which is secured to the handle as at 26. By this arrangement, sleeve 14 will normally assume the position of Fig. 1 in which the lower end of the sleeve forms a chamber for receiving a quantity of amalgam. To expel the amalgam into a tooth cavity, the handle 20 of the actuating lever is depressed toward the handle 10. This moves sleeve 14 relative to the limb 13 until the end of limb 13 is flush with, or extends a little beyond, the bottom edge of sleeve 14. The structure thus far described forms no part of the present invention and is the same as the structure of the aforesaid prior patent except for the spring 24 which was inadvertently omitted from the disclosure of the prior patent.

The invention in this case is to so arrange the axis of the sleeve 14 relative to the axis of handle 10 that the discharge end of the sleeve 14 will easily reach any cavity and, primarly, distal cavities, in any upper or lower tooth, regardless of the location of the tooth in the mouth without pain or discomfort.

This relation is shown, in a general way in Fig. 1 from which it will be seen that if the sleeve of the device of the prior patent is laid over the sleeve 14 of the present construction, the handle of the prior device will assume the position shown in broken lines in Fig. 1. The practical significance of this relationship is illustrated in Figs. 2, 3 and 4.

Referring to Fig. 2, it will be seen that, when used on the outer side wall of a rear tooth, the handle of the present improved device will pass through the center portion of the mouth and it will only necessitate moderate parting of the dentures to afford access to the tooth. When the device of the prior patent is used in the same way, the handle will project as shown in broken lines in Fig. 2 and this means that the mouth has to be stretched sideways and the jaw 30 has to be distended beyond the broken line position of the handle as shown in Fig. 2.

In Fig. 3 the device of the present invention is shown used on the distal side of a molar and again it will be seen that the handle projects substantially centrally of the mouth and that the handle of the device of the prior patent projects out of the side of the mouth and necessitates pushing the jaw back. This involves unpleasant, or painful pressure at the junction of the lips.

From Fig. 4 it will be seen that the present device can reach an upper molar with a very moderate parting of the jaws and that, when the device of the prior patent is used in the same way, the lower jaw must be depressed to a point below the lower, broken line position of the handle. Likewise, when the present device is used on a lower tooth, access can be had with a moderate parting of the jaws whereas if the device of the prior patent is used in the same way, the parting of the jaws must be much greater and the head of the patient must be tilted to an angle which is not comfortable to the patient or to the doctor.

What I claim is:

An amalgam carrier and applicator including a handle, a tubular element, a rigid member carried by one end of the handle with the free end thereof extending within said tubular element and adapted to project through one end thereof,

means biasing said tubular element along the axis of said rigid member in a direction whereby the free end of said rigid member is disposed inwardly of the adjacent end of said tubular element, and means for moving said tubular element in the reverse direction whereby the free end of said rigid member is substantially flush with the other end of said tubular element, the axis of said handle forming an acute angle with the axis of said tubular element, the axis of said handle also forming an acute angle with and being below a horizontal line with which the axis of said tubular member forms a right angle.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
2,503,156	Ivory	Apr. 4, 1950