Aug. 25, 1936. J. ZINK 2,052,158

CARTRIDGE FOR SEPARATELY STORING COMPONENTS OF DENTAL AMALGAMS

Filed Feb. 25, 1935

Fig.1.

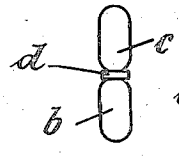


Fig.2.

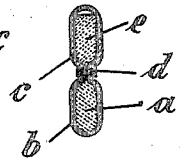


Fig.3.

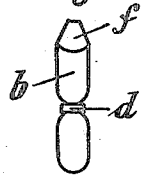


Fig.4.

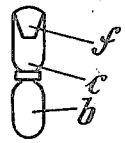
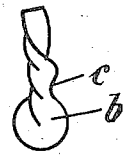


Fig.5.



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by [illegible]

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CARTRIDGE FOR SEPARATELY STORING COMPONENTS OF DENTAL AMALGAMS

Josef Zink, Regensburg-Kumpfmuhl, Germany

Application February 25, 1935, Serial No. 8,089
In Germany March 1, 1934

1 Claim. (Cl. 206—63.5)

Ampullae for the separate storage of mercury and metal powder in certain quantitive proportions for producing dental amalgams are known. These ampullae are open to the objection that they must be emptied for the purpose of preparing the amalgam stopping. There is always the danger of the dentist or his assistant being poisoned or injured by the mercury by rubbing mercury into the pores of the hand when kneading the amalgam. This objection is overcome by the cartridge according to the invention in that the cartridge is made of a pliable substance, such as rubber or the like and is divided into two compartments for the amalgam components by means of a clip slipped on to the outer side of the cartridge, so that, after removal of the clip, the components can be mixed in the interior of the cartridge by kneading with the hand. It is therefore impossible that mercury be rubbed into the skin of the hand because, when the components have been kneaded when still in the cartridge, the amalgam paste is ready for use for stopping the tooth.

An embodiment of the invention is illustrated by way of example in the accompanying drawing in which:—

Fig. 1 shows the cartridge in elevation.

Fig. 2 is a longitudinal section of Fig. 1.

Fig. 3 shows in elevation a cartridge before being closed.

Fig. 4 is a similar view of a closed cartridge.

Fig. 5 shows the cartridge during the kneading of the contents.

As mercury vapors always present a danger of injury to health, the quantity of mercury *a* (Fig. 2) necessary for a tooth stopping is filled into a rubber tube *b* closed at one end and narrowed intermediate its length at *c*. A device, such as a metal clip *d* or the like can be fitted on this narrowing *c* from the outer side of the tube so that it divides the tube into two compartments, into the upper one of which the metal powder *e* for the stopping is filled. The upper end of the tube can be closed in various ways. Thus, for example, a flap-like extension *f* may be provided on the wall of the tube (Fig. 3) which flap, when the tube has been filled, is folded over and stuck on the outer side of the tube, thereby tightly closing the tube. The closure may likewise be effected by a triangular cap which is slipped over the upper open end of the tube, which is pressed together at this point, the cap being rigidly secured on the tube by rubber solution or the like. As there are many similar possibilities of closing the tube, the invention is not restricted to any particular means.

The metal powder and mercury are mixed by bending open and removing the clip *d* with the aid of a suitable tool (for example a spattle or the like) so that the metal powder and mercury come together. The tube *b* can then be twisted together, between the fingers at one end (Fig. 5) in order to force the powder and mercury into a restricted space, whereupon the contents of the tube are thoroughly kneaded together between the thumb and index finger of the other hand.

In this manner it is possible to produce a properly proportioned amalgam paste ready for use for stopping a tooth, without any danger of the mercury being rubbed into the hands of the dentist or assistant.

For removing the contents from the cartridge a small hole is cut in the tube *b* with a pair of scissors or the like, whereupon the stopping can be inserted into the tooth without being touched with the bare hand.

The amalgam cartridge may be made in two or more different sizes for medium and large stoppings. The cartridge may likewise be employed for dental cement stoppings for which a pulverized substance and a liquid substance have to be mixed.

I claim:—

A cartridge for dental amalgam stopping for separately storing the predetermined quantities of mercury and metal powder, consisting of a receptacle of pliable material, such as rubber, and of a detachable closing element, such as a clip fitted on the outer side of said receptacle and dividing said receptacle into two compartments each accommodating one of the amalgam components, said element adapted to be removed from said receptacle to mix and knead the components by hand to form the amalgam stopping.

JOSEF ZINK.