

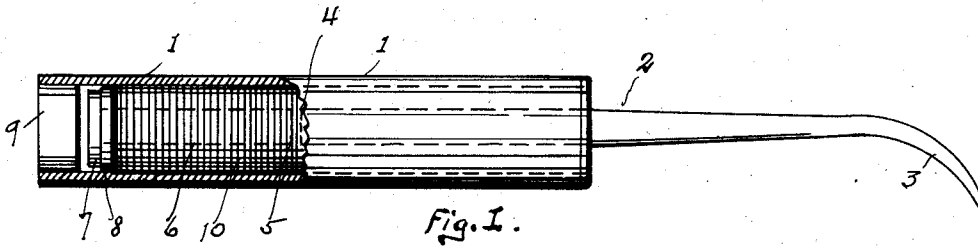
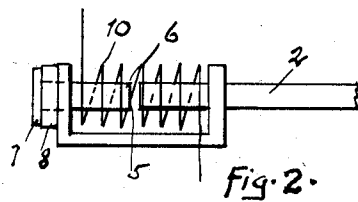
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VIBRATOR MOTOR

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VIBRATOR MOTOR

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2 Claims. (Cl. 172—126)

The invention relates to a vibrator particularly designed for satisfactory insertion of amalgam fillings in teeth, though useful otherwise in a variety of ways where a simple, extremely inexpensive and light vibrator is wanted. The object of the invention is to provide such a vibrator, primarily intended for use in filling teeth but capable of use in many other ways.

In the drawing Fig. 1 is a partly sectional view of a complete vibrator adapted for dental use;

Fig. 2 is a diagram of the electromagnetic means employed to set up the vibration.

I have discovered that if when the ordinary amalgam filling is inserted in a tooth cavity the amalgam is subjected to rapid vibration it sets better, forms a harder aggregate, and makes a greatly superior filling, with better wearing qualities, than those completed by the usual process of packing the amalgam by pressure within the cavity. Not only is the cavity not strained by the vibration process, as often happens in the usual packing, but the filling, suitably vibrated in the process of filling or insertion, becomes harder, more lasting, and in every way more satisfactory and the consequence of tooth strain, resulting sometimes in checking or cracking of the enamel is wholly avoided. In carrying the method into effect I insert the filling in the usual way and then, with a suitable applicator arranged to vibrate at proper speed, thoroughly vibrate the packing. The process causes it to become a hard durable, and satisfactory filling, without, as mentioned above, strain on the tooth walls, and better eliminates surplus mercury than the ordinary and usual packing process.

The apparatus for the purpose is preferably such as I have shown in Fig. 1. Here within a tube 1, 1, shown in section to the left, and which serves as a handle, is a solenoid adapted to be energized by alternating current from some suitable source, within which is a fixed core 2, the end of which is formed into the applicator 3, and a movable core 6, the end of which, at 5, is normally slightly separated from the adjacent end of core 2. Between a head 7 of the movable core 6, and the end of the solenoid is a spring, preferably as here shown, a ring or washer of rubber, as at 8, which serves to normally hold the core 6 slightly away from the core 2 fixed, as mentioned,

in the solenoid. In the Figure 1 is shown the inner end of core 2, 10 the solenoid, and 9 a suitable closure for the end of tube 1, 1, which serves as a handle. Fig. 2 illustrates the arrangement more clearly. Core 2, fixed to the casing, extends nearly to the end of core 6 and is normally separated only a slight distance—the limit of vibratory movement—from the end 5 of the movable core. The solenoid winding is illustrated at 10. 7 and 8 respectively represent like parts of Fig. 1. It will be seen that if the winding is supplied with suitable alternating current, of whatever voltage and amperage designed for, the movable core 6 will be set in motion, drawn in against fixed core 2 twice each cycle, and thus set up a rapid vibratory motion in the fixed core by the repeated impacts of the end 5 of core 6 against the end of the fixed core. The range of movement of the movable core can, of course, be limited as desired and may be made greater or smaller to suit requirements.

While the vibrator shown and described is peculiarly suited as apparatus for carrying out my method it is also, obviously, useful in practically any style of apparatus for producing vibratory movement. Made on a larger scale with heavier parts and taking more current, and with suitable applicator ends, a most efficient massage implement results. In fact the particular vibrator using the divided core within a solenoidal winding is valuable for a variety of uses wholly distinct from the vibration of amalgam fillings. It is herein claimed, therefore, not only as an essential adjunct to the method but generally and broadly as a vibrator.

Having described my invention what I claim is:—

1. In a vibrator of the class described, a resilient washer, a core of magnetic material formed in two parts normally separated by said resilient washer, and a solenoid surrounding said core, substantially as set forth.

2. In a vibrator of the class described, a resilient washer, a core formed in two parts one of which is provided with a head arranged to engage said washer and compress said washer when said parts are approximated, and a solenoid surrounding the said parts, substantially as set forth.

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