Jan. 30, 1962 H. BRILLIANT 3,018,778

SWAB

Filed Feb. 16, 1960

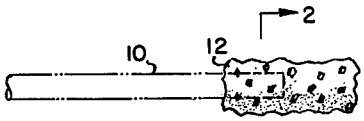


FIG. 1



FIG. 2

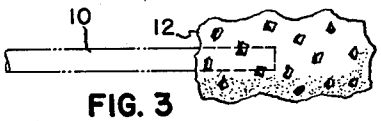


FIG. 3

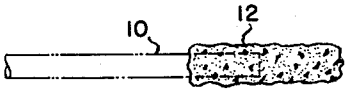


FIG. 4

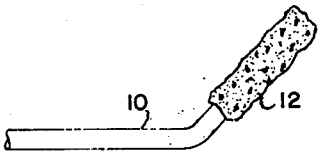


FIG. 5

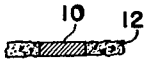


FIG. 6

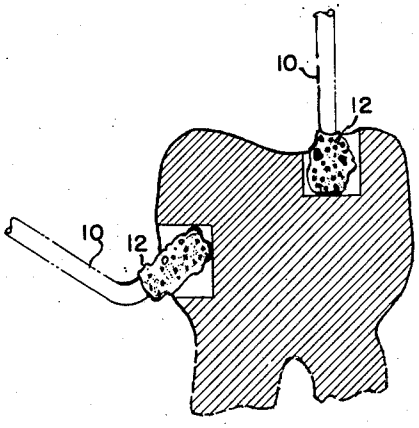


FIG. 7

INVENTOR
HERBERT BRILLIANT

Louis Necho
ATTORNEY

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SWAB

Herbert Brilliant, 6612 Torresdale Ave., Philadelphia 35, Pa.

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This invention relates to a dental swab which is especially adapted for cleaning, drying, anaesthetizing or sterilizing or otherwise treating dental cavities.

One object of the invention is to produce an improved swab of the type set forth.

One method of carrying out the operations enumerated consists in picking up a preformed wad, or pellet, of cotton with a pair of tweezers and using it, in the dry state, or after wetting it with the desired solution before applying it to the surface to be treated. This practice is not wholly satisfactory because maneuvering the pellet in a relatively inaccessible dental cavity requires considerable dexterity. Also, the pellet frequently drops from the tweezers and another one must be picked up or the pellet may work loose from the tweezers inside the cavity being treated thus entailing additional work and discomfort. When the pellet is to be used for sterilizing, anaesthetizing, etc., it must be dipped in the appropriate solution, and, in such cases, the pellet may be overcharged, or undercharged and, in either case, even, extended manipulation of the pellet by the tweezers does not assure adequate contact with all of the surfaces and corners of the cavity.

In order to overcome these objections, it has been proposed to produce prefabricated swabs consisting of a pre-treated pellet attached to an applicator which serves as a handle so that it is merely necessary to moisten the pellet before applying it to the cavity. This practice is also not wholly satisfactory because the pellet has a generally firm, rounded and smooth contour so that, even when tapered, the pellet may and may not, even with prolonged effort, effectively reach all of the surfaces to be dried or treated. Furthermore, a wad of cotton shrinks when wetted.

It is, therefore, a further object of the invention to produce a prefabricated, medicated or non-medicated swab which will quickly, effectively, and with minimum skill and effort, make thorough contact with all of the surfaces and corners of a dental cavity to be treated.

A pellet formed of a relatively tightly wound and generally rounded wad of cotton makes contact with a very limited area of the surface to be treated and, therefore, it must be moved in and out and back and forth dextrously and for a relatively long period of time in order to insure adequate contact with the surfaces to be treated without excess fluid or excess pressure, both of which are undesirable, especially when the surface to be treated is sensitive.

It is, therefore, a still further object of the invention to produce a swab, the pellet of which, when wetted, will become soft and will be readily distorted in various directions and thus reach surfaces and corners which are out of reach of the firm, smooth, rounded surface of the cotton pellets of the prior art.

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

FIG. 1 is a diagrammatic elevational view showing the first step in making a swab embodying my invention, or before the pellet has been wetted with the desired solution.

FIG. 2 is a sectional view taken on line 2—2 on FIG. 1.

FIG. 3 shows the swab of FIG. 1 expanded as a result of being wetted with the desired solution.

FIG. 4 shows the swab of FIG. 2 after it has dried and shrunk and is ready for use.

FIG. 5 shows the swab of FIG. 3, and its applicator, bent at an angle to facilitate access to all of the surfaces of remote cavities.

FIG. 6 is similar to FIG. 2 showing a flat pellet.

FIG. 7 graphically illustrates the application of the swabs of FIGS. 3 and 4 to cavities in different sides of a tooth.

A swab embodying my invention includes an applicator **10** which may be thin and slightly flexible so as to bend somewhat, and may be made of wood, or metal, or of a synthetic material, such as methyl methacrylate, or the like. If desired, applicator **10** may be made of form retaining material such as soft metal, or it may be molded to the form shown in FIG. 5, or other configuration.

According to my invention, pellet **12** should be made of a material which expands when it is wet and becomes soft so as to yield and become distorted under light pressure, either to fill or to reach all surfaces of a cavity, or to provide a larger wiping surface and to provide more intimate contact with the surface to be dried or treated.

To this end I found that a sliver of natural sponge or of "sponge rubber," will constitute a satisfactory pellet in that, when wetted, the material becomes very soft and expands considerably, but, according to my invention, the pellet may be made of any other natural, or synthetic material having these characteristics.

To make the pellet of my invention, I cut a sliver of sponge, etc. to a relatively large size as shown in FIG. 1, and I wet it with the desired solution, whereupon the pellet expands as diagrammatically illustrated in FIG. 2. The pellet is then dried under pressure, or under heat and pressure, so as to compress it to the size shown in FIG. 4 which is smaller than the size of the pellet before it is wetted, as in FIG. 1, and much smaller than the size the pellet will assume when it is wet, as shown in FIG. 3. When no medication is required, the pellet will be wetted with water or other neutral fluid and compressed and dried. When medication is desired, the pellet of FIG. 1 is dipped in the desired antiseptic or other solution and compressed. It will be noted that, during the drying process, the amount of medication retained in the pellet is controlled so that, when the pellet is wetted for, or during use, the medication will be of the desired strength. When it is to be used, the pellet is moistened and inserted into the cavity or it may be inserted in the dry state so as to be moistened with the fluid available in the cavity. Since antiseptic solutions are well known, it is thought unnecessary to specify any particular solution except to say that phenol or creosote will do. In use, the relatively thin pellet of FIG. 4 is inserted dry or is wetted and inserted into a cavity, as shown, for example in FIG. 7. The pellet immediately expands and becomes soft so that, by manipulation of the applicator, the body of the pellet will, under very little pressure, become distorted and will "flow or "creep" into corners and crevices which cannot be reached by the conventional cotton pellet now in use.

When a dental cavity is filled with amalgam, it is necessary to smooth the exposed surfaces and it is necessary to remove excess mercury which, if not removed, will weaken the filling. According to my invention, the pellet is impregnated with powdered or dissolved tin or other compound which reacts with mercury so that, by passing the pellet over the exposed surfaces of the filling, the superficial outer layer of the amalgam will be smoothed out and excess mercury will be removed by combining with the tin.

What I claim is:

1. A dental swab for use in treating dental cavities, said swab including an applicator and a pellet of a predetermined dry-state size secured to one end of said applicator, said pellet being made of a resilient, porous and

absorbent material which, when wetted, becomes soft and expands considerably beyond said dry-state size, said pellet being impregnated with a metallic component which reacts with mercury whereby, when mercury is applied to said pellet, an amalgam is formed.

2. The structure recited in claim 1 in which said applicator is bent.

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