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J. B. DAVIES

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MEDICAMENT APPLICATOR

Filed Nov. 2, 1928

Fig. 1.

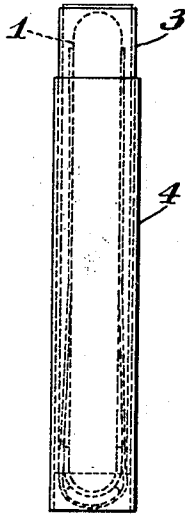


Fig. 2.

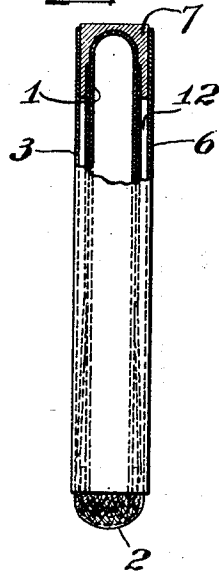


Fig. 3.

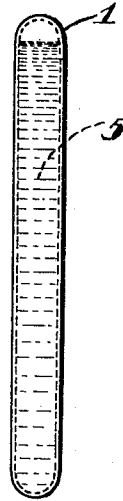


Fig. 4.

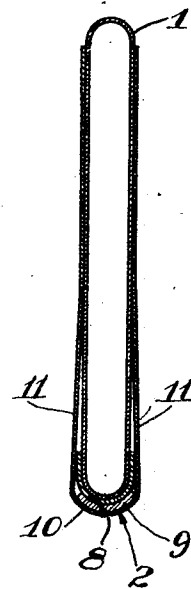


Fig. 5.

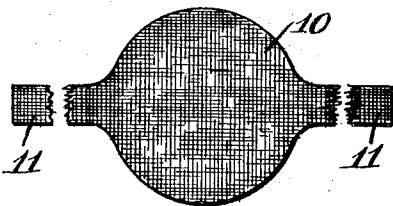


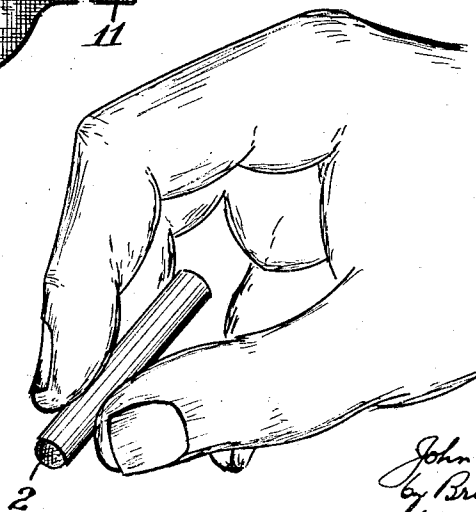
Fig. 6.



Fig. 7.



Fig. 8.



WITNESSES

A. B. Wallace.
J. B. Flick.

INVENTOR

John B. Davies
by Brown & Cuthlow
his attorneys

UNITED STATES PATENT OFFICE

JOHN B. DAVIES, OF CRAFTON, PENNSYLVANIA, ASSIGNOR TO MINE SAFETY APPLIANCES COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

MEDICAMENT APPLICATOR

Application filed November 2, 1928. Serial No. 316,710.

The invention relates to medicament applicators of the emergency type, comprising an ampoule containing a medicament, and means associated therewith for dispensing the contents of the ampoule after it has been opened.

The applicators of this type heretofore used have generally comprised an ampoule containing an antiseptic liquid together with a section of capillary glass tubing, by means of which small amounts of the liquid may be transferred from the ampoule to a wound or other surface to be treated; and a peripheral line of weakness is generally provided intermediate the ends of the ampoule to facilitate its opening. The production of such a unit necessitates glass cutting operations which may involve breakage loss, and the formation of the line of weakness may increase breakage loss and add to the cost. In the use of these applicators the ampoule in being opened may not break evenly, glass fragments may be scattered into the liquid. It is difficult to quickly cover large areas with a capillary applicator, and the fingers of a user holding the capillary usually become stained. Also, it is usually necessary to hold the ampoule in one hand while using the capillary tube with the other, thus totally engaging both hands. Furthermore, the ampoule is usually loosely enclosed in a two-part casing, from which it may fall when the casing is opened, or while the transfer tube is opened, or while the transfer tube is being used, and the liquid is in any event liable to be spilled and damage clothing or other articles.

The object of the present invention is to provide a simple and sturdy applicator which is easily and cheaply produced, and which is provided with an absorbent swab protected from contamination, the applicator being readily and quickly prepared for use without the dangers or disadvantages of prior types of applicator devices.

The preferred embodiment of the invention is shown in the accompanying drawings in which Fig. 1 is a side view of an applicator with a swab protector applied thereto; Fig. 2 a similar view partly in section show-

ing an applicator member; Fig. 3 a side view of an ampoule containing medicament; Fig. 4 a longitudinal section through an ampoule and swab ready for assembly to form an applicator; Figs. 5 to 7 plan views of the components of the swab; all of the preceding views being enlarged for better illustration; and Fig. 8 is a perspective view showing the manner of using the applicators.

The applicator provided by the invention comprises a sealed frangible ampoule containing a medicament, a protective casing closed at one end engaging the ampoule and enclosing its side walls and one end, and an absorbent swab extending outwardly from and closing the outer end of the casing. The casing is substantially impervious to liquid, and while being stiff enough to protect the ampoule from untimely breakage, its side walls are manually compressible to crush the ampoule and release its contained medicament, the casing then acting to direct the medicament through the swab. In the preferred embodiment, the swab comprises a plurality of layers of absorbent material which prevent spurting of the medicament when the ampoule is opened and absorb and hold it for application at the desired place. Although the swab-covered end of the ampoule may extend somewhat from the open end of the casing, it is preferred, for greater safety, to wholly encase it. It is also preferred to apply the swab to an end of and affix it to the ampoule, although the swab may be inserted in or otherwise attached to the casing itself. The swab may be, and preferably is, protected from contamination by a cap fitting over the end of the casing and enclosing the swab.

Having reference now to the drawings, the embodiment there shown comprises an ampoule 1, a swab 2, a protective casing 3, and a swab-protecting cap 4. The ampoule, which is made from thin wall glass tubing, contains a medicament 5, such as an oil for covering burns, a solution of iodine or mercurchrome, or the like. Casing 3 is most suitably made from coiled paper of sufficient strength to provide the necessary stiffness, a paper being preferably chosen which is sufficiently dense to prevent material absorption

of the liquid medicament. One end of the casing is closed, and this may be accomplished by crimping in and gluing the end, but in the preferred form the casing is made up of a cylindrical tube 6 formed of coiled paper having one end closed by a plug 7. This plug, which is also made from paper, makes a sliding fit with the tube, and it is provided with a cavity adapted to snugly engage the inner end of the ampoule, as shown in Fig. 2. The ampoule, plug and tube may be cemented together to hold them in fixed position, as by means of an adhesive such as water glass.

The swab shown comprises an inner layer 8 of filter paper cut in circular form, an intermediate relatively thick circular pad 9 of terry cloth, and an outer retaining gauze layer having a circular body portion 10 and two diametrically opposed arms 11. Preferably the swab is applied to an end of the ampoule, the outer retaining gauze being drawn tight to form a smooth pad, and the arms 11 being drawn over the sides of the ampoule and extended into the cavity in plug 7. When the ampoule with its swab is assembled in the casing, the side walls of the ampoule are spaced from the container wall, as shown at 12, this being an added protection against premature breakage of the ampoule.

Cap 4 may also be of coiled paper construction, one end being crimped and glued to close it, and upon slipping it over the swab end of the applicator the swab is protected from dirt and other contaminating material. By providing the cap with a long skirt, additional protection is given to the tube over those portions which are spaced from the casing; the plug described above reinforcing the portion of the casing which the cap does not cover.

In order to use the applicator, cap 4 is withdrawn and the applicator grasped near the swab end between the thumb and first two fingers, preferably with the swab end down, as shown in Fig. 8, and upon applying sufficient pressure with the fingers, the casing walls will be compressed and the ampoule crushed. The liquid contents of the ampoule are directed to the swab by the casing and are absorbed, and the medicament is applied to a wound or other part by rubbing it with the swab.

The thick absorbent swab prevents dripping of the medicament, and withholds all of the glass fragments, so that there is no danger from that source. In the case of some medicaments there may be a tendency for the liquid to spurt forth when the containing ampoule is broken, causing loss of or damage by the liquid, but in the applicator provided by the invention, any such spurring is fully restrained by the swab and especially by the filter paper layer.

According to the provisions of the patent statutes, I have explained the principle and

operation of my invention, and have illustrated and described what I now consider to represent its best embodiment. However, I desire to have it understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically illustrated and described.

I claim:

1. A medicament applicator comprising a tubular protective casing closed at one end and substantially impervious to liquid, a frangible ampoule containing a medicament enclosed in said casing and breakable in its body portion, and an exposed swab associated with and closing the other end of said casing, said medicament being releasable by compression of the side walls of the casing to break the ampoule in its main body portion without contamination of said swab by the compressing means, and the medicament thus released being then directed within and by the casing to the swab.

2. A medicament applicator comprising a frangible ampoule containing a medicament and breakable in its body portion, a swab formed from a plurality of layers of absorbent material applied to one end of the ampoule and having portions extended along the side walls thereof, said swab being adapted to prevent spurring when the medicament is released, and a tubular protective casing closed at one end and substantially impervious to liquid engaging said ampoule at its end portions to space the body of the ampoule from the inner wall of the casing and form a free passage for medicament when the body of said ampoule is broken, the swab closing the open end of said casing and having an exposed outer portion, said medicament being releasable by compression of the side walls of the casing to break the ampoule in its main body portion without contamination of said swab by the compressing means, and the medicament thus released being then directed within and by the casing to the swab.

3. A medicament applicator comprising a frangible ampoule containing a medicament and breakable in its body portion, a tubular protective casing closed at one end and substantially impervious to liquid enclosing said ampoule, a swab associated with and closing the open end of said casing, and a cap formed from the same material as said casing and telescoped over the swab end thereof to protect said swab from contamination prior to use, said medicament being releasable by compression of the side walls of the casing to break the ampoule in its main body portion without contamination of said swab by the compressing means, and the medicament thus released being then directed within and by the casing to the swab.

In testimony whereof, I sign my name.

JOHN B. DAVIES. 130