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1,513,342

F. W. NITARDY

APPLICATOR

Filed June 14, 1922

Fig. 1,

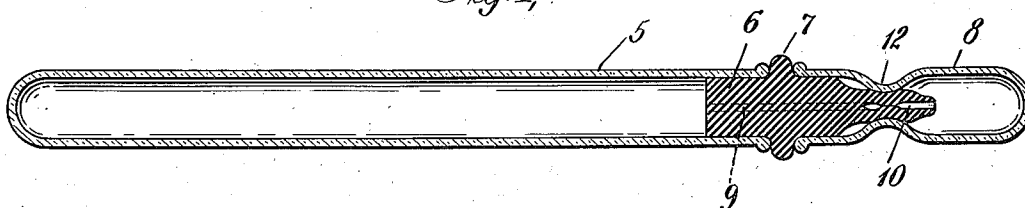


Fig. 2,

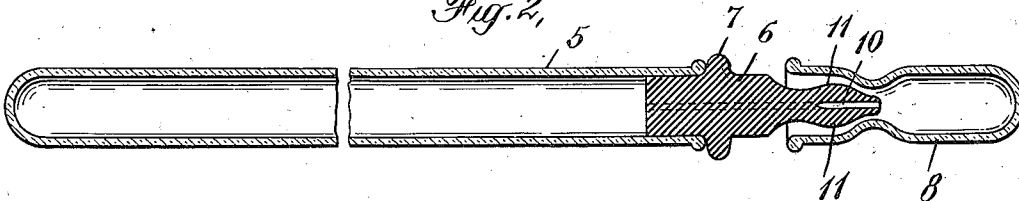


Fig. 3,

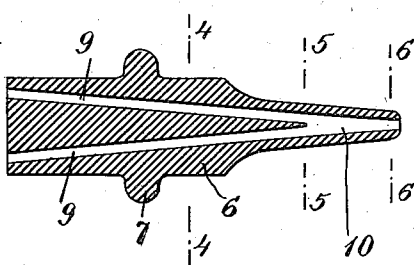


Fig. 4,

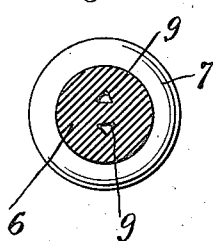


Fig. 5,

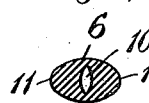


Fig. 6,



INVENTOR

Ferdinand W. Nitardy
BY
Pennie Davis Mason & Edmunds
his ATTORNEYS

UNITED STATES PATENT OFFICE.

FERDINAND W. NITARDY, OF BROOKLYN, NEW YORK, ASSIGNOR TO E. R. SQUIBB AND SONS, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

APPLICATOR.

Application filed June 14, 1922. Serial No. 568,138.

To all whom it may concern:

Be it known that I, FERDINAND W. NITARDY, a citizen of the United States, residing at Brooklyn, in the county of Kings, State of New York, have invented certain new and useful Improvements in Applicators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an applicator or fountain pencil adapted to contain medicated solutions such as tincture of iodine and permitting the effective application of such solutions.

Iodine solutions, which are employed in surgical and medical practice as an antiseptic in treating wounds and as a counter-irritant in reducing swellings and the like, have the disadvantage of discoloring the fingers of the user and of attacking various materials with which they may contact. The use of ordinary containers such as bottles for iodine solutions and the application of the solution with swabs of absorbent cotton are to be avoided, therefore, as far as is possible. Ampules of glass containing small quantities of the solution and having swabs of cotton attached into which the iodine is absorbed when the glass is broken have been suggested heretofore, but while such devices are relatively inexpensive, they are not entirely satisfactory.

It is the object of the present invention to provide a simple and inexpensive applicator which has numerous advantages, among which are capacity, ease of application and prevention of leakage.

Other objects and advantages of the invention will be apparent as it is better understood by reference to the following specification and accompanying drawing, in which

Fig. 1 is a longitudinal section through the applicator with the cap in place to seal the outlet;

Fig. 2 is a similar view of the applicator with the cap removed;

Fig. 3 is a longitudinal section illustrating the feed passages through which the solution is delivered; and

Figs. 4, 5 and 6 are sections on the lines 4—4, 5—5 and 6—6 of Fig. 3.

Referring to the drawing, 5 indicates the

fountain of the applicator which may be constructed of suitable material such as glass, hard rubber or a phenol condensation product. The fountain is preferably cylindrical in form, open at one end, and of sufficient length to provide a reservoir of desired capacity. A closure or stopper 6 is inserted in the open end of the fountain and is preferably provided with a flange 7 which abuts the end of the fountain. The flange should extend slightly beyond the edge of the fountain so that it may be grasped by the fingers of the user.

The stopper 6 is designed to permit the flow of liquid from the fountain, to serve as a swab or brush and to cooperate with a cap 8 for the purpose of securely sealing the passage through which the liquid escapes. Preferably the stopper is constructed of soft rubber and is provided with two converging passages 9 so that in whatever position the applicator is held air may enter the fountain as the liquid flows therefrom. At the point where the two passages come together forming a single outlet 10, the stopper, which is otherwise substantially circular in section, is provided with thickened walls or swells 11 which are adapted to be engaged by a constricted portion 12 of the cap 8. The cap thus pinches the stopper at the point indicated and closes the outlet 10.

To ensure a tight seal the passages 9 are preferably triangular in section, forming a lens-shaped passage at their junction with its major axis perpendicular to the major axis of the elliptical section of the stopper at this point. Thus resistance to the flattening effect of the cap is reduced and resiliency is preserved so that the passage will open when the cap is removed. The end of the stopper is preferably circular in section and the wall is sufficiently thin to provide a soft and flexible swab whereby the solution may be applied to a wound or other surface.

The flange 7 forms a stop against which the cap 8 abuts when in place, thus ensuring proper cooperation of the constricted portion of the cap with the swells 11 on the stopper. The flange also serves to limit the position of the stopper with respect to the fountain 5 and may be grasped by the user to prevent withdrawal of the stopper when the cap is removed.

In using the applicator the cap, which

normally prevents escape of liquid, is withdrawn, thus permitting the outlet passage to open. The outlet end of the stopper may then be applied to a surface. The liquid
 5 will escape slowly and may be spread over the surface. When application is completed the cap may be replaced and will again seal the outlet. Only a few drops of the solution will remain in the outlet passage and this
 10 will be prevented, by capillary action, from escaping.

From the foregoing description it will be observed that I have provided a compact and handy applicator which may be used
 15 without soiling the fingers. Sufficient solution may be provided for a number of applications. The soft rubber swab will not harden as cotton swabs do after contact with the iodine, and the device may be used as
 20 long as the supply of solution is available. Waste of material by absorption in the swab as is common in applicators heretofore in use is prevented. Only so much of the solution as is necessary need be utilized, whereas in ampules the solution is lost if not utilized at once.

Various changes may be made in the form and arrangement of the parts without departing from the invention, and as will be
 30 readily understood, the applicator, although especially adapted for use with iodine solutions, may be otherwise utilized.

I claim:—

1. In an applicator, the combination of a
 35 fountain, a resilient closure at one end thereof having a passage therethrough and a cap having a constricted portion adapted to cooperate with the closure to seal the passage.

2. In an applicator, the combination of a
 40 fountain, a resilient closure at one end thereof having a passage therethrough and a cap adapted to pinch the closure and thereby seal the passage.

3. In an applicator, the combination of a
 45 fountain, a closure at one end thereof having passages therethrough converging to a common outlet, and a cap adapted to pinch the closure and thereby seal the outlet.

4. In an applicator, the combination of a
 50 fountain, a resilient closure at one end thereof having passages therethrough of substantially triangular section converging to a

common outlet, and means for applying pressure to the closure at the point of convergence of the passages to close the outlet. 55

5. In an applicator, the combination of a fountain, a resilient closure at one end thereof having passages therethrough of substantially triangular section converging to a common outlet and a cap adapted to apply
 60 pressure to the closure at the point of convergence of the passages to close the outlet.

6. In an applicator, the combination of a fountain, a resilient closure having a lens-shaped outlet passage, and means for applying pressure to the closure in perpendicular directions to the major axis of the passage. 65

7. In an applicator, the combination of a fountain, a resilient closure having a lens-shaped outlet passage, and means for applying pressure to the closure in perpendicular directions to the major axis of the passage, the closure having swells cooperating with said means. 70

8. In an applicator, the combination of a fountain, a resilient closure having a lens-shaped outlet passage and a cap having a constricted portion adapted to compress the closure and close the passage. 75

9. In an applicator, the combination of a fountain, a resilient closure therefor having a flange extending beyond the edge of the fountain and a passage permitting the escape of liquid from the fountain, and a cap adapted to pinch the closure and thereby
 85 seal the passage, the flange serving to fix the position of the cap with respect to the closure and being adapted to be grasped by the fingers of the user when the cap is removed. 90

10. In an applicator, the combination of a fountain, a resilient closure therefor having a flange extending beyond the edge of the fountain and a passage permitting the escape of liquid from the fountain, and a cap having a constricted portion cooperating with the closure to seal the passage, the flange serving to fix the position of the cap with respect to the closure and being adapted to be grasped by the fingers of the user
 100 when the cap is removed.

In testimony whereof I affix my signature.

FERDINAND W. NITARDY.