Jan. 27, 1953 F. E. BROWN 2,626,847

APPLICATOR FOR SEMISOLID STICK MATERIAL

Filed July 31, 1951

Fig. 1

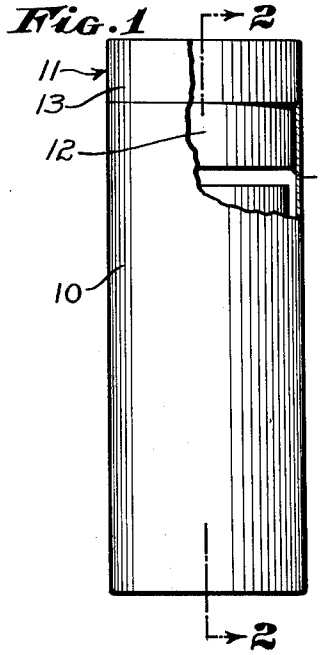


Fig. 2

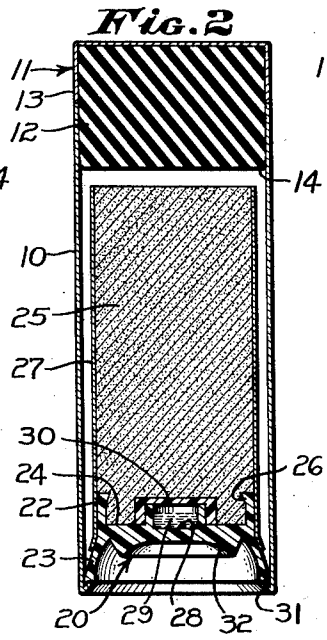


Fig. 3

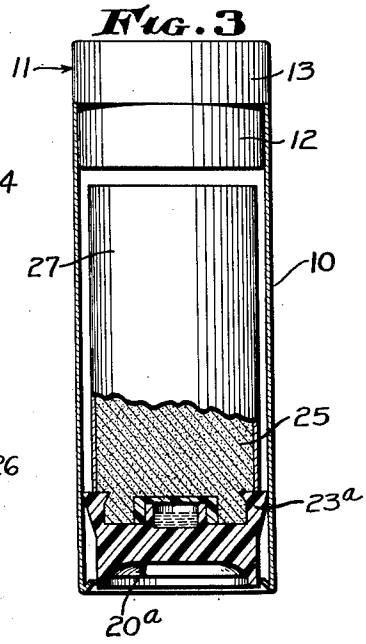


Fig. 4

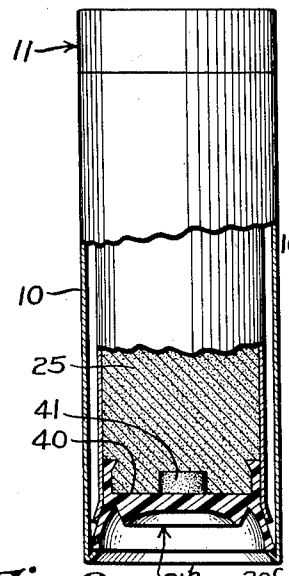


Fig. 5

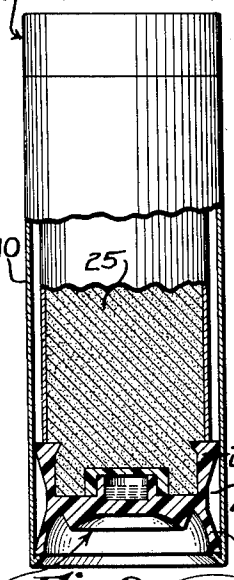


Fig. 6

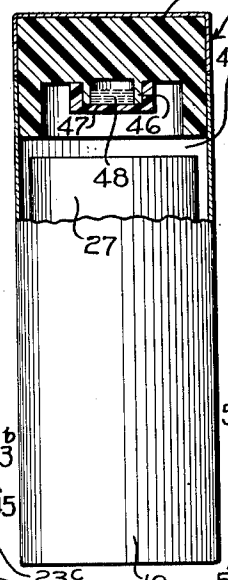


Fig. 7

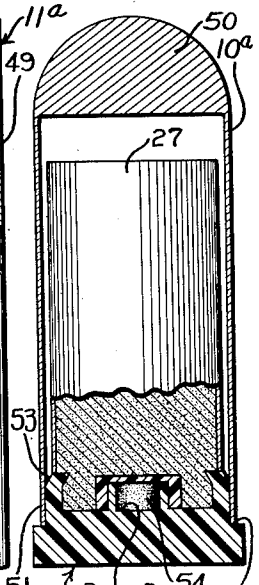


Fig. 8

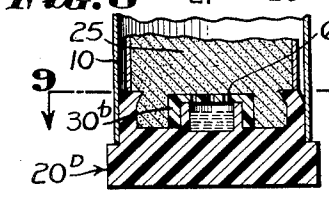
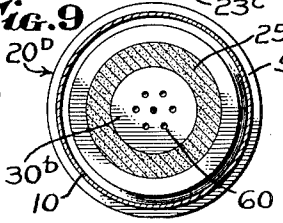


Fig. 9



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APPLICATOR FOR SEMISOLID STICK MATERIAL

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Application July 31, 1951, Serial No. 239,479

4 Claims. (Cl. 312—31.1)

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This invention relates to cosmetics and has particular reference to a receptacle and applicator for cologne or perfume of the semisolid type.

So-called semisolid colognes or perfumes are conventionally provided in the form of sticks, consisting primarily of a wax-like carrier or base of relatively low melting point material having dispersed therethrough an essential oil or oils. The sticks are generally cylindrical and are wrapped in metallic foil or the like to prevent drying out of the stick due to evaporation of the volatile perfume or essence. These sticks are sold commercially in containers of glass or in metallic cylinders for carrying on the person; and for use the stick must be completely removed from the container, often resulting in the stick being dropped and soiled or damaged.

Accordingly, one of the principal objects of this invention is to provide a combined container and applicator for semisolid stick material of the character described.

Under normal conditions of use, it has been found that the cologne sticks dry out, losing substantially all of the essence by volatilization, before the stick has been completely used. It is therefore another object of this invention to provide a container and applicator for perfumed stick material which is provided with a reservoir of perfume or essential oils which continuously replenishes the volatile scent materials lost from the stick through evaporation.

A further object of this invention is to provide a device of the character described which includes a retainer member or plunger adapted to retain the perfumed stick material in operative position in the container, and which forms the bottom of the container, the plunger further acting as a sealing member to prevent evaporation of the volatile essential oil.

It is another object of this invention to provide a receptacle and applicator for stick perfume, the device having a plunger adapted to maintain perfumed stick material in operative relation with the receptacle, the plunger being attached to the stick at the unused end thereof, and said plunger being provided with a reservoir for essential oils whereby the volatile essence lost by evaporation from the stick is continuously replenished through the unused end by the essential oils from said reservoir.

A further object of this invention is to provide a device of the character described in which the essence reservoir is provided with a cover of material which is permeable to the essence to permit slow migration of the volatile scent materials from the reservoir and into the stick.

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Yet another object of this invention is to provide a refill unit for containers adapted to receive stick material of the character described, the refill unit including a stick of scented material and a plunger attached thereto, the plunger being readily insertable in the container, yet being provided with sealing means to prevent loss of volatile material from the stick.

Other objects and advantages of this invention it is believed will be readily apparent from the following detailed description of preferred embodiments thereof when read in connection with the accompanying drawings.

In the drawings:

Figure 1 is a side elevation, with the casing partly broken away, of a preferred embodiment of my invention.

Figure 2 is a sectional elevation taken substantially on the line 2—2 of Figure 1.

Figure 3 is a side elevation, partly in vertical section, of a modified form of my invention.

Figure 4 is a side elevation, partly in vertical section, of another modification of the invention.

Figure 5 is a side elevation, partly in vertical section, of another modified form of this invention.

Figure 6 is a side elevation, partly in vertical section, of a further modified form of the invention.

Figure 7 is a side elevation, partly in vertical section, of a further modification of the invention.

Figure 8 is a fragmentary vertical section of yet another modified form of the invention.

Figure 9 is a sectional elevation taken substantially on the line 9—9 of Figure 8.

Referring now to the drawings, a preferred embodiment of my invention is illustrated in Figures 1 and 2, and includes a cylindrical casing or shell 10, open at both ends. The shell, which is preferably of metal or some other vapor-impervious material, is provided at the upper end with a stopper generally indicated 11, having a sealing portion 12 of rubber or rubber-like material encased in a metallic end sheath 13 which forms a continuation of the shell 10. The sealing portion 12 is slightly oversize with respect to the inner diameter of the shell to form a tight seal therewith and is provided with a beveled lower peripheral edge 14 for easy insertion of the stopper.

Slidably carried within the shell is a stick retainer member or plunger generally indicated 20, preferably molded of a flexible plastic material such as polyethylene, although other flexible or rubber-like materials may be used, such

as, for example, synthetic or natural rubber, or any suitable plasticized resin material. The plunger is generally cylindrical in shape, having a solid central portion 21 and a cylindrical wall 22 extending upwardly therefrom. The lower portion of the plunger is provided with an outwardly flared skirt or bell portion 23 which contacts the inner wall of the shell in sealing relation therewith. The normal diameter of the lowermost portion of the skirt 23 is appreciably greater than the inner diameter of the shell 10 so that in the position shown the skirt is under compression to provide a tight seal with the inner wall of the shell.

Means are provided for retaining a stick 25 of semisolid scented material in assembled relation with the plunger, and as shown in the drawings, these means include an annular groove 24 in the upper portion of the plunger, the groove forming the cylindrical wall 21. The stick 25 is molded into the annular groove 24 and in order to prevent disassembly of the stick from the plunger, the wall 21 is provided with an inwardly directed annular lip or flange 26. The sides of the stick 25 are provided with a sheath 27 of metallic foil or like material which extends downwardly over the upper portion of the plunger as shown.

The plunger is further provided with a central well or recess 28 which forms a reservoir for liquid essential oil indicated at 29. The recess is provided with a cover member or cap 30 of the same material as the plunger proper but being relatively thin with respect to the solid portion 21.

As shown in Figure 2, the bottom end of the shell wall is rolled inwardly and upwardly to provide a finished edge 31. Additionally, this edge prevents misapplication of the stopper 11 to the lower end of the shell and further prevents disengagement of the plunger from the shell through sliding in a downward direction.

For use, the stopper 11 is removed and the stick moved upwardly with respect to the shell by inserting a finger or like object in the open lower end of the shell and pushing upwardly on the plunger, finger recess 32 being provided on the plunger to facilitate this operation. The stick is moved upwardly a distance sufficient to clear the now open top end of the shell and the stick material is ready for use as desired. It will be understood that in addition to forming a tight seal for preventing loss of volatile essence, the frictional contact between the flared skirt 23 and the shell wall is sufficient to maintain the plunger and stick in any desired position in the shell, even when it is inverted.

While the stopper 11 and the plunger 20 cooperate to effectively seal the stick 21 within the shell 10 and prevent substantial loss of volatile material therefrom, upon repeated opening and closing of the shell, and during use, considerable essence is lost from the stick through evaporation. In order to avoid substantially complete drying out of the stick before the major portion thereof is used, the reservoir 28 is provided. It has been found that only a few drops of essential oil in this reservoir are sufficient to supply to the stick the essence which is lost through evaporation. The essence migrates upwardly through the relatively thin cap 30 and also downwardly between the side of the recess and the side of the cap and thence upwardly to permeate the stick material and to continuously replenish the same with essence.

The modified form of the invention illustrated in Figure 3 is substantially similar to that illustrated in Figures 1 and 2, with the exception that the plunger 20^a is provided with a flared skirt 23^a at the upper end of the plunger rather than at the lower end, and here the skirt 23^a extends upwardly and outwardly rather than downwardly and outwardly. With the plunger thus constructed, the plunger and stick assembly is more easily inserted initially into the shell and therefore this structure lends itself more readily to a refill assembly. That is, with the device as shown in Figure 3, upon exhaustion of the stick the plunger may be removed by pushing it out through the open upper end of the shell and then discarded. A new plunger and stick assembly of the type shown in Figure 3 may then be easily inserted into the shell through the open upper end thereof by reason of the disposition of the flared skirt 23. However, insertion by the user of the plunger and stick assembly shown in Figure 2 is considerably more difficult due to the oversized skirt 23 wihich must be inserted first.

The modification illustrated in Figure 4 is similar to that shown in Figure 2 except that here no reservoir 28 is provided. The plunger 21^b is merely formed with an enlarged central recess 40 and a "pill" 41 of essence is placed in the recess and molded there in place with the stick 25. Such a pill may consist of any suitable absorbent material such as cotton or silica gel impregnated or saturated with the desired essence. As an alternative to the absorbent material, the pill 41 may consist of a conventional gelatine capsule in which is contained the liquid essence.

In Figure 5 is illustrated a modified form of the invention which again is similar to that shown in Figures 1 and 2. Here, however, the plunger 20^c is provided with upper and lower flared skirt portions 23^b and 23^c which define therebetween a dead air space 45. A more effective seal is thus provided.

In Figure 6, the essence reservoir is formed in the sealing portion 12^a of the stopper 11^a. As shown, the portion 12^a is provided with a depending cylindrical member 46 which is closed by means of a cap member 47 frictionally engaged thereon, the members defining a reservoir for the reception of the liquid essential oil indicated 48. Here again, the essence migrates through the relatively thin cap member and through the interface between the cap and cylindrical member 46, but here the essence travels through the air space 49 to the upper portion of the stick 25.

In the modified form of the invention illustrated in Figure 7, the shell 10^a is provided with a closed upper end 50. The open lower end of the shell is normally closed by means of the stick retainer member 20^d which is provided with a cylindrical surface 51 fitting in sealing relation with the shell and a shoulder 52 preventing complete telescoping of the member 20^d within the shell. The upper portion of the member 20^d is provided with a beveled edge 53 permitting easy insertion of the member in position in the shell. The member 20^d is otherwise identical with the plunger 20 of Figure 2. Rather than liquid essence, however, the reservoir 28^d contains a charge 54 of absorbent material such as silica gel which is saturated with the essence, providing a slower transfer of the essence to the stick 25. It will of course be understood that the use of such a charge 54 is not limited to the structure shown

in Figure 7 but it may be used in any of the structures shown.

In use of the device shown in Figure 7, the retainer and stick assembly is simply removed completely from the shell 10a and then reinserted after use to seal the stick in place.

The modified form of the invention shown in Figures 8 and 9 is similar to that shown in Figure 7, with the exception that the cap 30b is provided in the upper portion thereof with a plurality of relatively small apertures 60 which permit faster migration of the essence from the reservoir and into the stick. Here again, it is apparent that the use of such apertures is not limited to use with the other structure illustrated in Figures 7–9.

While I have shown and described the invention as embodied in an applicator for perfumed semisolid material, it is not inherently so limited and may be used in connection with all types of semisolid transfer materials such as, for example, shaving sticks, deodorants, menthylated sticks, and other medicated stick materials.

Having fully described my invention, it is to be understood that I do not wish to be limited to the details herein set forth but my invention is of the full scope of the appended claims.

I claim:

1. In an applicator for semisolid stick perfume, the combination of a cylindrical shell, a plunger slidably carried within said shell; said plunger being provided with an annular portion in sealing relation with the inner wall of said shell; means on said plunger for retaining a stick of semisolid material; said means including an annular groove coaxial with said plunger, and an inwardly directed flange extending transversely into said groove, whereby the lower portion of a semisolid stick may be molded in said groove and the stick maintained therein by said flange; the portion of said plunger within said groove being provided with a central recess forming a reservoir for perfume; and a cap member for said recess, said cap member being relatively thin and of a permeable material so that perfume lost by evaporation from the stick is continuously replaced by migration of perfume from said recess through said cap member and into said stick.

2. In an applicator for semisolid stick perfume, the combination of a cylindrical shell, a unitary and imperforate cup-shaped plunger slidably carried within said shell; the side walls of said plunger being in sealing relation with the inner wall of said shell; means on said plunger within said cup for retaining a stick of semisolid material when said plunger is in said shell; said means including cylindrical walls defining the inside of said cup-shaped plunger, and an inwardly directed flange on said walls; a stick of perfumed semisolid material, the lower end of said stick being molded into said recess; and means retaining a charge of perfume on said plunger and adjacent the lower end of said stick, said charge of perfume being sealed against escape except through said semisolid material whereby perfume lost by evaporation from the stick is continuously replaced by migration of perfume from said charge and into said stick.

3. In an applicator for semisolid stick material, the combination of a cylindrical shell, a unitary and imperforate cup-shaped plunger freely slidably carried within said shell, the side wall of said plunger being normally outwardly flared toward the open end of said cup, flexible, and in sealing relation with the inner wall of said shell throughout an annular band adjacent the open end of said cup, the flared side being distorted inwardly by said shell and surrounding an end of a stick of semisolid material and thereby gripping and retaining said stick on said plunger when said side wall engages the inside of said shell.

4. In an applicator for semisolid stick material, the combination of a cylindrical shell; a unitary and imperforate plunger freely slidably carried within said shell; said plunger being cup-shaped with its side wall normally outwardly flared toward the open end of said cup, flexible, and in sealing relation with the inner wall of said shell throughout an annular band adjacent the open end of said cup; and means on said plunger for retaining a stick of semisolid material, said means including a cylindrical surface defining the inside of said cup and surrounding an end of said stick, an inwardly directed flange on said side wall adjacent the open end of said cup, said side wall being distorted inwardly by said shell to thereby grip and retain said stick on said plunger when said side wall engages the inside of said shell.

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