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Continuation of application Ser. No.
685,383, Nov. 24, 1967, now abandoned.

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[54] **AEROSOL DISPENSER ATTACHMENT FOR**
INCORPORATING ADDITIVES INTO SPRAY
COMPOSITIONS
7 Claims, 6 Drawing Figs.

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 [51] Int. Cl. B65d 83/06
 [50] Field of Search 222/146,
 136, 145, 190, 402.12, 402.13, 402.18, 402.1;
 239/135, 137

ABSTRACT: An adapter for use in combination with an aerosol dispenser containing a first material to be dispensed and having a valve stem. The adapter comprises a container having a lower section provided with a recess therein for receiving the valve stem and an upper section detachably secured to the lower section and having a spray button. A second material to be mixed with the first material is disposed in the container for scenting, coloring, treating, or exothermic reaction with the first material.

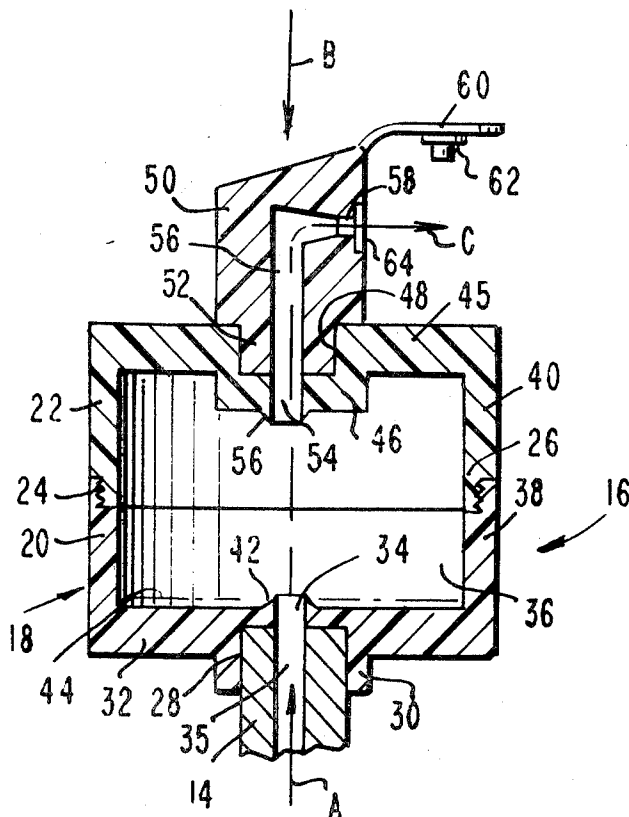


FIG. 1

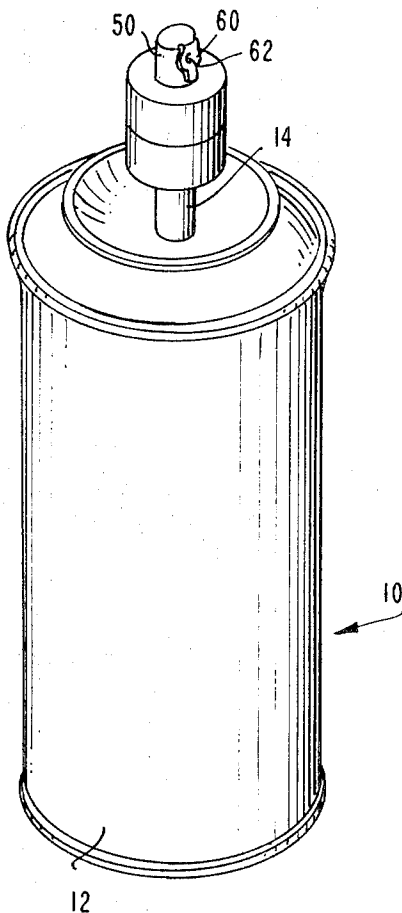


FIG. 2

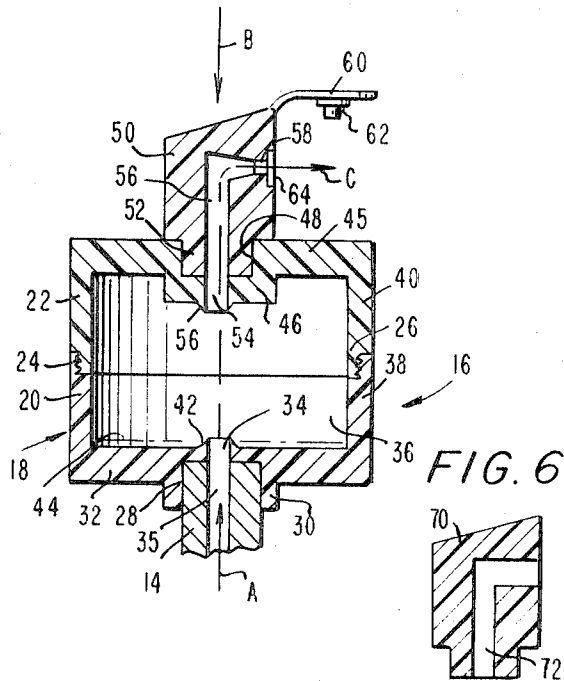


FIG. 6

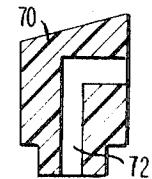


FIG. 3

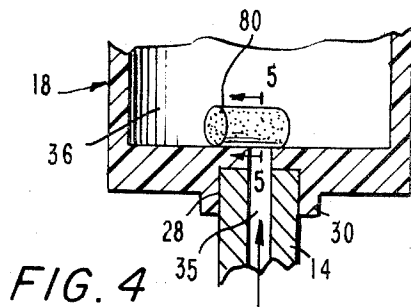
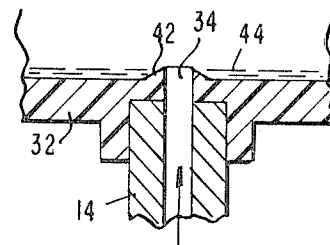
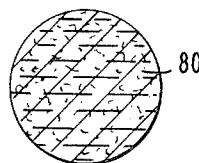


FIG. 5



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AEROSOL DISPENSER ATTACHMENT FOR INCORPORATING ADDITIVES INTO SPRAY COMPOSITIONS

This application is a continuation of our copending application Ser. No. 685,383, filed Nov. 24, 1967, now abandoned.

This invention relates to an adapter for use in combination with an aerosol dispenser, and more particularly to a device for facilitating the incorporation of certain additives into products dispensed from aerosol containers.

Frequently a need exists to incorporate additives to products dispensed from aerosol containers. These additives may be perfumes, active agents, other modifiers or the like. The product in question may be cosmetics or any other material where the addition of certain substances at the time the material is to be dispensed may play an important role.

It is therefore the primary concept of the present invention to provide a simple compact adapter which can be utilized with a conventional aerosol dispenser and which is operated in such the same manner as a conventional aerosol dispenser, thus facilitating the use thereof by the consumer without requiring any education or instruction of the consumer as to the manner in which the device is to be utilized, thereby enhancing the immediate acceptance of the adapter for wide use and distribution.

The adapter features a two section chamber which is arranged to be fitted over the valve stem of a conventional aerosol dispenser and which is provided with a spray button for conveniently actuating the device.

One of the features of the invention is the provision of threaded connection means between the upper and lower sections of the two-section chamber so that additional material can, at any time, be conveniently added to the chamber so the ultimate material to be dispensed can be provided with any one of a selected group of additives. It is contemplated, for example, when adapting the device to provide for dispensing a soap or detergent, cosmetic or other material, any one of a number of scents may be imparted to the material being dispensed by introducing a selected perfume or essence into the lower section of the chamber immediately before use.

It is further contemplated to utilize the invention for effectively dispensing a cosmetic product that is heated at the time of use by the use of an exothermic action.

In accordance with the invention described in the copending application of M. Cordon and A. Dillarstone, Ser. No. 560,140, filed June 24, 1966, it has been found that a self-heating cosmetic preparation can be composed of at least two discrete materials particularly suitable for providing a heated cosmetic product at the time of use. It is therefore within the contemplation of this invention to utilize as one material a shaving cream base or other cosmetic base with one of the materials adapted for exothermic reaction while the other material can be disposed in the adapter.

An important object of the present invention is to provide an adapter for a conventional aerosol container that can be mass produced at a relatively low cost so as to permit wide use and distribution, and which can be either marketed separately in connection with an aerosol container, which can be manufactured out of readily available materials such as synthetic plastics, and in which a preferred embodiment is comprised of a container having a lower section provided with a recess therein for receiving the valve stem of an aerosol dispenser. The container further includes an upper section provided with a spray button. The upper section is threadably detachably secured to the lower section. The materials to be dispensed include a liquid material which is adapted to be disposed in the adapter while the other material comprises a shaving cream base having incorporated therein another material adapted to react exothermically with the liquid material on contact therewith, whereby upon activation of the spray head, the shaving cream base together with its associated material is fed into the chamber for combination and exothermic interaction with the liquid material and thereafter delivered from the

spray head as a pressure propelled self-heated shaving cream ready for use.

The present invention is highly advantageous in that it provides for convenient dispensing of heated cosmetic compositions wherein the cosmetic compositions are self-heated at the time of use without the necessity of any separate heating devices. Heating of the compositions by electrical devices, hot water, or hot air is eliminated since the ingredients combine and react exothermically to provide a self-heated cosmetic product ready for use. It is to be noted that separate heating devices give immediate heat to products with subsequent cooling thereafter whereby the heat of the exothermic reaction of the present invention enables the product to become progressively warmer and the heat is sustained over a period of time. As an advantage of the invention the consumer can utilize these products by simple depression of the spray button of the adapter thereby discharging the heated product ready for use.

A further advantage of the invention is that while a heated product is desired at the time of use, the heat producing materials are kept separate during storage and only allowed to contact upon depression of the spray head when the heated cosmetic preparation is desired for use.

These, together with the various ancillary objects and features of the present invention, as will become apparent as the following description proceeds, are attained by this adapter for an aerosol container, a preferred embodiment of which has been shown in the accompanying drawing, by way of example only, wherein:

FIG. 1 is a perspective view illustrating the adapter on an aerosol dispenser;

FIG. 2 is a longitudinal sectional view through the adapter mounted on the valve stem of an aerosol container;

FIG. 3 is an enlarged sectional view showing details of the construction of an embodiment of the invention with greater clarity;

FIG. 4 is a partial longitudinal sectional view through a modified form of the adapter;

FIG. 5 is a vertical sectional view taken along the plane of line 5-5 in FIG. 4; and,

FIG. 6 is a sectional detail view of a modified form of spray head.

With continuing reference to the accompanying drawings, wherein like reference numerals designate similar parts throughout the various views, reference numeral 10 generally designates an aerosol dispenser including a container 12 in which there is housed suitable propellant means for delivering a first material packaged in the container 12. The dispenser 10 is provided with a valve stem 14 through which the propellant forces the first material to be dispensed. In lieu of a conventional spray button for actuating the valve stem 14, the adapter generally designated by reference numeral 16, in accordance with the concept of the present invention, is employed.

The adapter 16 includes a container 18, having a lower section 20 and an upper section 22. The lower section 20 is internally threaded at 24 for threaded reception of the external threads 26 provided on the upper section 22 so that the two sections may be easily attached to each other or detached as desired.

The lower section 20 is provided with a recess 28 therein in which the valve stem 14 seats and is closely embraced. Further snugly receiving and securely holding the valve stem 14 is a peripheral flange 30 which extends downwardly from the bottom wall 32 of the lower section 20 and serves to suitably maintain the adapter 16 in an erect position on the valve stem 14. The bottom wall 32 is provided with a bore 34 therethrough which is in alignment and communicates with the opening 35 in the valve stem for delivery of material upwardly in the direction of the arrow A from the container 12 through the valve stem 14 and into the chamber 36 defined by the container sections 20 and 22. The container section 20 is provided with cylindrical sidewalls 38 which are aligned with the cylindrical walls 40 of the container section 22.

Surrounding the bore 34 is a flange 42 which is preferably triangular in cross section. This flange 42, as can be seen in FIG. 3, serves to retain small amount of a second liquid material 44 from feeding back through the bore 34 in certain instances of use of this adapter.

The upper section 24 has its top wall 45 provided with a depressed portion 46 defining a cavity 48 for receiving a spray button 50. The spray button has a portion 52 of reducing cross-sectional shape received in the cavity 48. The depressed portion 46 is provided with a bore 54 adapted to be aligned with the opening 56 through the spray button 50 which is connected to a constricted portion 58 for discharging the material to be dispensed. A button flap or cover 60, preferably integrally molded or otherwise formed or connected to the spray button 50 is provided and has snap means 62 for resiliently holding the cover 60 in place. A recess 64 is provided in the spray button 50 for receiving the snap means 62. The depressed portion 46 has integrally formed therewith a peripheral flange 56 of triangular shape in cross section.

Upon actuation of the spray button 50 downwardly, as indicated by arrow B, a cosmetic material such as a face cleansing soap passes upwardly in the direction of arrow A through opening 35 and through bore 34 into the chamber 36. The cosmetic material will thence in an expanded state pass upwardly toward bore 54 and will pass through opening 56 and through the constricted portion 58 outwardly of the spray button 50 in the direction indicated by arrow C. As the cosmetic material passes into the chamber 36, it will lie and rest on the surface of the liquid material 44 and it will admix with and pick up some of the liquid material 44 and carry it up through and out of the spray button 50.

The following are examples given to illustrate the present invention more fully, but is not to be regarded as limiting the scope of the invention. All amounts and percentages given in the specification and claims are by weight unless otherwise indicated.

The material "A" is disposed in the adapter, while the material "B" is packaged in the container:

EXAMPLE I

(A)	Parts by weight	(B)	Parts by weight
Essence of heliotrope...	6	Soap base.....	95.4
Paraffin oil.....	94	87% isobutane/13% propellant.	4.6
Total.....	100		100.0

It is within the concept of the present invention to utilize the adapter 16 to dispensing self-heated shaving cream. When using the invention to dispense shaving cream, a spray button of the type illustrated in FIG. 6 and generally indicated by reference numeral 70 is employed. In connection therewith coating materials including a shaving cream base are provided for effective self-heating shaving cream preparations.

In operation, upon actuation of the spray button 70 downwardly, a shaving cream base containing for example either a hydride or a reducible material is delivered first into the chamber 36 where it mixes with another containing a reducible material or a hydride for exothermic reaction and delivery out of the spray button 70 through bore 72.

EXAMPLE II

The following hydride-containing material (A) and reducible material-containing material (B) produce effective self-heating shaving cream preparations:

(A)	Parts by weight	(B)	Parts by weight
Water.....	18.0	Glyceraldehyde (40% aqueous acid).	33.0
Sodium hydroxide..	0.1		
Sodium borohydride....	9.0	Citric acid.....	0.6
Lauric-coconut diethanolamide.	6.0	Shaving cream base**	66.4
Paraffin oil.....	66.6		
Total.....	100.0		100.0

**Shaving Cream Base contains 83% water, 7% stearic acid, 3% Potassium hydroxide, 1% sodium hydroxide, 1% coconut oil acids, and balance being

optional ingredients (perfume, coconut oil, glycerine, lauric-myristic diethanolamide)

Material (A) is prepared by first dissolving the sodium borohydride in the water in the presence of the sodium hydroxide hydrolysis inhibitor at room temperature with gentle stirring. Thereafter, the lauric-coconut diethanolamide and paraffin oil are added thereto with stirring.

Material (B) is prepared by adding to the shaving cream base the aqueous solution of glyceraldehyde and the citric acid at room temperature with gentle stirring. The citric acid is present in an amount sufficient to adjust the pH of the solution to below 11, i.e. in an amount sufficient to prevent the formation of a too highly alkaline system.

In assembling a system employing dispenser 12 and adapter 16 to provide a self-heated shaving product part (A) is added as found necessary to adapter 16. The aerosol dispenser 10 is loaded with material (B) and 87 percent isobutane/13 percent propellant in the ratio of substantially 96.6 percent material B and 3.4 percent propellant.

When using the invention, depression of the spray button 70 will cause the material in the container 10 to pass upwardly through the opening 36 and hence through the bore 34 into the chamber 36 where the materials will exothermically react and thence pass through the bore 54 and out of the opening 72 in the spray head 70.

Referring now to FIGS. 4 and 5, it is further within the concept of the present invention to utilize a porous absorbent material for disposition in the adapter 16 in lieu of a liquid or other fluid. For example, a body 80 formed of a porous absorbent filter material, similar to the type as is conventionally used in cigarette filters may be impregnated with a perfume, essence, or a medication, and thence disposed in the chamber 36. The body 80 may be thoroughly saturated with a liquid essence, perfume or the like and upon actuation of the spray button, the material passing into the chamber will have the essence of perfume of which the body 80 is impregnated imparted thereto for delivering a selective scent, medication or coloring to the material being dispensed. It is possible to eliminate the flange 42 in this embodiment of the invention.

In use, after the material in the container 10 has passed upwardly through the valve stem 14 and into the chamber 18, it will contact the body 80 and the perfume or essence therein will be carried by the cosmetic material being dispensed upwardly and out of the spray button. Any remaining material in the chamber 36 will be impregnated with the essence or perfume for further dispensing.

A latitude of modification, substitution and change is intended in the foregoing disclosure, and in some instances some features of the invention will be employed without a corresponding use of other features. Accordingly, it is appropriate that the appended claims be construed broadly and in a manner consistent with the spirit and scope of the invention herein.

We Claim:

1. An adapter for use in combination with an aerosol dispenser containing a first material to be dispensed and having a valve stem, said adapter comprising a two-part container including a lower section having a cylindrical side wall and a bottom wall provided with a recess therein for receiving said valve stem, and an upper section having a cylindrical side wall and a top wall, an actuation button having an inlet, a passageway, and an outlet, means detachably connecting the top wall of said upper section with said actuation button, means detachably connecting said upper section with said lower section to form a chamber therebetween, passage means in said top wall of said upper section providing communication between said chamber and the inlet in said actuation button, means in said lower section communicating said chamber with said valve stem, and a second material to be mixed with said first material disposed in said chamber.

2. An adapter according to claim 1 wherein said means in said lower section includes a bore in said lower section, and an upwardly extending flange surrounding said bore.

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3. An adapter according to claim 2, wherein said second material is a liquid having a liquid level below the height of said flange.

4. An adapter according to claim 2, wherein said flange is of a frustoconical shape.

5. An adapter according to claim 2 which includes flange means depending from said lower section and embracing said valve stem.

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6. An adapter according to claim 1, which includes a body of porous absorbent material, said body being impregnated with said second material.

7. An adapter according to claim 1, wherein said upper section and said lower section are provided with complementary threaded portions, said upper section and said lower section being detachably threadedly secured together, and the actuation button is provided with a removable cover.

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