Jan. 17, 1967 G. SCHWARTZMAN 3,298,055

APPLICATOR INCLUDING MEANS FOR SEALING A DAUBER TO A CONTAINER

Filed Oct. 20, 1964

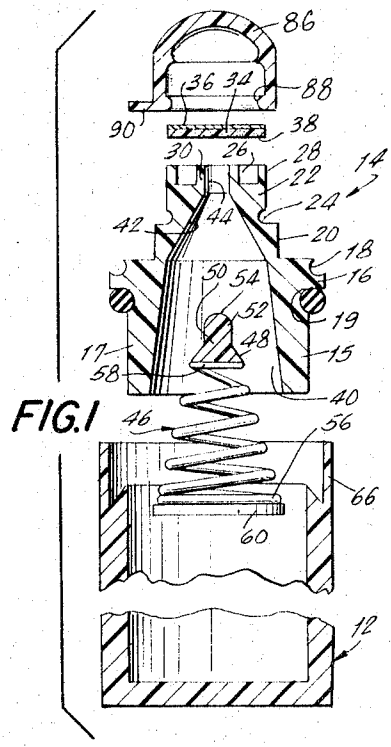


FIG. 1

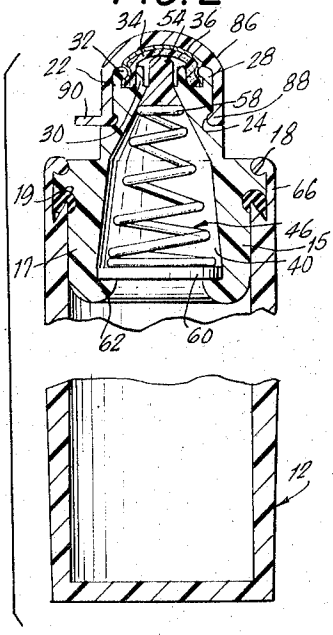


FIG. 2

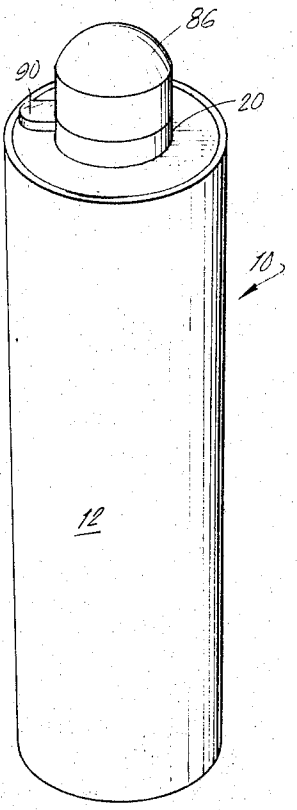


FIG. 6

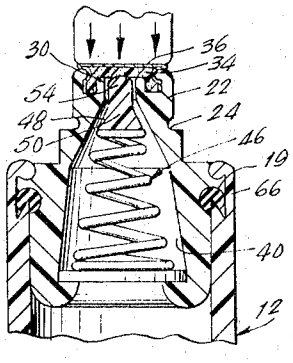


FIG. 3

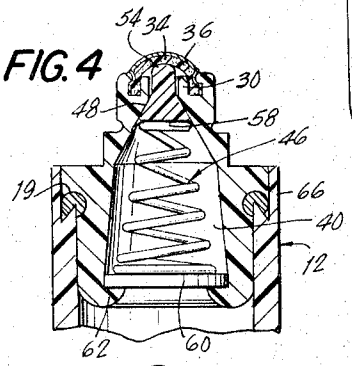


FIG. 4

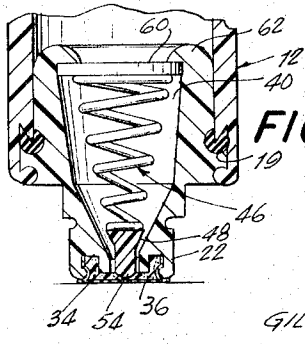


FIG. 5

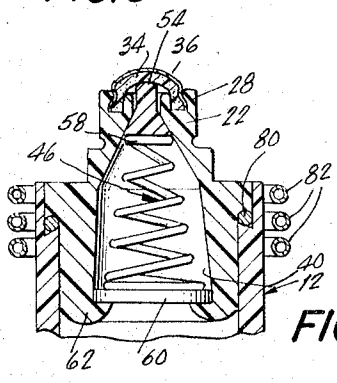


FIG. 7

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APPLICATOR INCLUDING MEANS FOR SEALING A DAUBER TO A CONTAINER

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This invention relates to an applicator for use in applying shoe polish, cosmetics or medications and more particularly to a swaged assembly of a dauber and container.

An object of this invention resides in the provision of means for facilitating the application of shoe polish or the like.

Another object of this invention resides in the provision of novel dauber having valve means which is automatically actuated and adapted to control the flow of shoe polish from a dauber for obtaining an even flow of shoe polish onto a shoe, the dauber being swaged to a container in a fluid tight manner.

A further object of this invention is to provide for better control of fluid flow of material being applied into cracks, crevices, as well as sizeable areas, providing for a leakproof and spillproof package for the material to be applied, while also saving on material costs.

It is highly desirable that packages for shoe polish, various medications, and cosmetics be spillproof and leakproof because of the permanent stains that can result if the material in the packages is released due to accident or inadvertence. Accordingly, it is an additional object of this invention to provide a spillproof, substantially shatterproof, leakproof applicator, which can be easily assembled and filled.

Modern packaging techniques and styles attempt to render packages more compact, streamlined and eye-appealing. Further, in modern packaging there is an ever-increasing use of various synthetic plastics such as polyethylene and polyurethane for the production of substantially unbreakable containers.

Accordingly, it is another object of this invention to provide an applicator constructed mainly of synthetic plastic having a dauber with a spring operated valve member for permitting fluid flow to the dauber in a controlled manner and which applicator conveniently permits the filling of the applicator by means of a needle insertable through the cover and past the valve member, yet which applicator is leakproof and modern in style.

Still other objects and features of this invention reside in the provision of an applicator which is inexpensive to manufacture, simple to fill with fluid of various viscosities in an effective manner so that the dauber is especially adapted for use in applying shoe polish, medications, cosmetics, oils, polishes and the like, which applicator may be made in any convenient size as desired, and which applicator may be provided with a dauber head of a reduced size.

These, together with the various ancillary objects and features of the invention, which will become apparent as the following description proceeds, are attained by this applicator, a preferred embodiment of which has been illustrated in the accompanying drawings, by way of example only, wherein:

FIG. 1 is an exploded vertical sectional view illustrating component elements of the applicator;

FIG. 2 is a cross-sectional view illustrating the applicator in an assembled state;

FIG. 3 is a cross-sectional view similar to that of FIG. 2, but illustrating the applicator with the valve assembly in an open position;

FIG. 4 is a sectional detail view of a modified form of the applicator with the cap removed and with the valve assembly in a closed position;

FIG. 5 is a sectional view of the applicator of FIGS. 1–3 illustrating the dauber in use for application of shoe polish or the like;

FIG. 6 is a perspective view of the applicator;

FIG. 7 is a sectional detail view showing the modified form of FIG. 4 during the manufacture thereof.

With continuing reference to the accompanying drawings, particularly the embodiment of FIGS. 1–3, wherein like reference numerals designate similar parts throughout the various views, reference numeral **10** is used to generally designate the applicator comprising the present invention. This applicator includes two main parts, a container **12** formed of a suitable plastic material such as polyethylene, polyurethane or the like, and a dauber assembly **14** adapted to be swaged to the container **12**. The dauber assembly **14** includes a housing **15** with a projecting portion **17** having a flange **16** provided with an arcuate upper groove **18** and an arcuate lower groove **19** therein.

The projecting portion **17** has integrally formed therewith a reduced neck portion **20** and a head **22** of even lesser cross sectional dimensions than the neck portion **20**. An arcuate groove **24** is located at the juncture of the neck portion **20** and the head **22**.

The head **22** has a circular recess **26** formed in the top surface thereof defining a flange **28** and a rib **30**. The flange **28** is swaged as at **32** to hold a disc **34** in position.

The disc **34** is constructed of two layers, the upper layer **36** of which is formed of nylon knitted brushed fabric so as to achieve a felt-like applicator surface and appearance, while having the chemical inertness and strength of the nylon. Laminated and bonded to the nylon knitted brush fabric is the lower layer **38** of coarse polyurethane foam.

The housing **15** has a tapered bore **40** extending therethrough. The bore **40** has its widest diameter at the bottom of the projecting portion **17** and tapers at a slight angle inwardly and upwardly. At the neck portion **20** the bore tapers at a much sharper angle to form conical interior wall portions **42**. The inner walls **44** of the head defining the bore **40** are very restricted in size and of a much reduced cross sectional dimension.

A valve assembly **46** is disposed in the bore **40**. Cooperating with the arcuate tapered walls **44**, which serves as a valve seat, is the conical surface **48** of a valve head **50** having a cylindrical portion **52** terminating in a hemispherical surface **54**. The valve assembly **46** includes a spring **56** formed in tapered helical coils, the portion of smaller diameter being secured or integrally formed at **58** with valve head **50**. The lower end **60** of the spring **56** is in the form of a ring and is held in place in the housing **15** by the swaged end **62** of the housing **15**. The swaged end **62** thus retains the valve assembly **46** within the housing **15** with the spring **56** in a continuously stressed condition under compression so that the valve head **50** is continuously urged into contact with walls **42** and through and outwardly of bore **40** for the purpose of closing the bore **40** and preventing fluid flow from the container **12** onto the cover **36**.

Depending mainly upon the small size and surface area of the hemispherical surface **54** the dauber may be used to apply fluid into small spaces. It has been found that for application of shoe polish, a hemispherical shape is preferred because otherwise hard to reach places can be easily given an adequate coating of shoe polish.

The container **12** is provided with an upper portion **66** of reduced wall thickness. The juncture of the upper portion **66** of the container **12** is defined by a triangular groove **68** forming a knife edged circular lip **70**. A

gasket 72 formed of rubber or rubber like plastic material is disposed in a circular groove 74 adjacent the flange 16 and the upper portion 66 of the container 12 is swaged so as to fit in groove 18 to secure the container 12 to the dauber assembly 14 to form the unitary applicator. The knife edge of the lip 70 is engaged with and presses into central portions of the gasket 72 to provide for fluid tightness of an unusually high order.

In order to fill the applicator, a needle on the order of a hyperdermic needle is inserted through the cover 36 and the valve head 50 is depressed allowing the container to be filled.

The embodiment shown in FIGS. 4 and 7 is similar to that of FIGS. 1–3 with the exception that instead of swaging the dauber assembly 14 to the container, a metal gasket ring 80 is employed, and electrical heat induction-magnetic coils 82 are disposed about the container 12 for heat sealing the container 12 to the dauber assembly 14.

The container 12 may be of any convenient size and shape. A cap 86 is provided and may be of a snap-fit type arranged with tongue 88 to snap over the cover and into groove 24. A detent 90 may be provided to facilitate removal of the cap 86.

In use, with the cap 86 removed depression of the cover 36 will depress the valve head 50 allowing fluid to pass onto the cover 36. The restrictive size of the cover 20, valve head 50 and semi-cylindrical surface 54 of the valve head produces good fluid flow control and facilitates application of fluid even to surfaces having cracks and crevices therein in a smooth and even coating.

A latitude of modification, change and substitution 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 approprate that the appended claims be construed broadly and in a manner consistent with the spirit and scope of the invention herein.

I claim:

1. An applicator comprising a dauber assembly having a housing, said housing provided with a tapered bore therethrough forming a valve seat, a valve member movable with respect to said valve seat to control fluid flow through said bore, a container, said dauber assembly having an annular groove therein, said dauber assembly having a projecting portion extending into said container, said container including a lip and an upper portion of reduced thickness, a gasket disposed in said annular groove, said upper portion being secured to said housing with said lips engaging said gasket.

2. An applicator comprising a dauber assembly having a housing, a resilient cover secured to said housing, said housing having a tapered bore therethrough forming a valve seat, a spring pressed valve member movable with respect to said valve seat to control fluid flow through said bore to said cover, a container, said dauber assembly having an annular groove therein, said dauber assembly having a projecting portion extending into said container, said container including a lip and an upper portion of reduced thickness, a metallic gasket disposed in said groove, said upper portion being bonded to said housing with said lip engaging said gasket.

3. An applicator comprising a dauber assembly having a housing, provided with a tapered bore therethrough forming a valve seat, a valve member movable with respect to said valve seat to control fluid flow through said bore, said dauber assembly having an upper annular groove therein and a lower annular groove therein, a container, said dauber assembly having a projecting portion extending into said container, said container including a lip provided with a knife edge, said lip having an upper portion of reduced thickness, a gasket disposed in said lower groove, said upper portion being swaged into said upper groove with said knife edge pressing into said gasket.

4. An applicator comprising a dauber assembly having a housing, said housing having a tapered bore therethrough forming a valve seat, a valve member movable with respect to said valve seat to control fluid flow through said bore, said dauber assembly having an upper annular groove therein and a lower annular groove therein, said dauber assembly having a projecting portion extending into said container, said container including a lip with a knife edge and an upper portion of reduced thickness, a gasket disposed in said lower groove, said upper portion being swaged into said upper groove with said knife edge engaging said gasket.

5. An applicator comprising a dauber assembly having a housing, a cover secured to said housing, said housing having a tapered bore therethrough forming a valve seat, a valve member movable with respect to said valve seat to control fluid flow through said bore, said valve member including spring means engaging said housing and a valve head, said spring means urging said valve head toward said cover and against said valve seat, said cover being deformable so that said valve head may be depressed away from said valve seat against the force exerted by said spring means, a container, said dauber assembly having an upper annular groove therein and a lower annular groove therein, said dauber assembly having a projecting portion extending into said container, said container including a lip and an upper portion of reduced thickness, a gasket disposed in said lower groove, said upper portion being swaged into said upper groove with said lip engaging said gasket.

6. An applicator comprising a dauber assembly having a housing, a cover secured to said housing, said housing having a tapered bore therethrough forming a valve seat, a valve member movable with respect to said valve seat to control fluid flow through said bore, said valve member including spring means engaging said housing and a valve head, said spring means urging said valve head toward said cover and against said valve seat, said cover being deformable so that said valve head may be depressed away from said valve seat against the force exerted by said spring means, a container, said dauber assembly having an upper annular groove therein and a lower annular groove therein, said dauber assembly having a projecting portion extending into said container, said container including a lip with a knife edge, said lip having an upper portion of reduced thickness, a gasket disposed in said lower groove, said upper portion being swaged into said upper groove with said knife edge pressing into said gasket.

7. An applicator according to claim 6 wherein said cover is of a two-ply laminated material including an upper layer of nylon knitted brushed fabric and a lower layer of coarse polyurethane foam bonded to said upper layer.

No references cited.

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