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3,135,988

DAUBER HAVING DOME-SHAPED COVER SUPPORT

Filed Jan. 24, 1963

FIG. 1

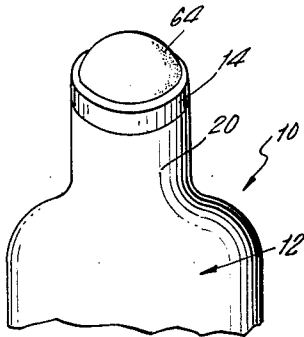


FIG. 3

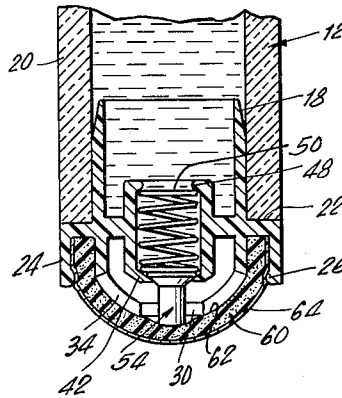
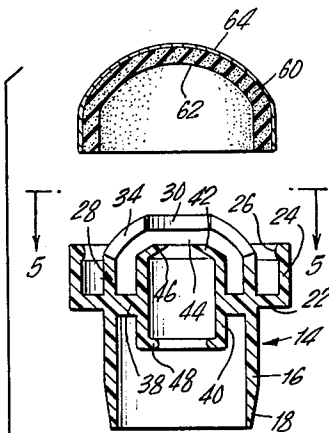


FIG. 2

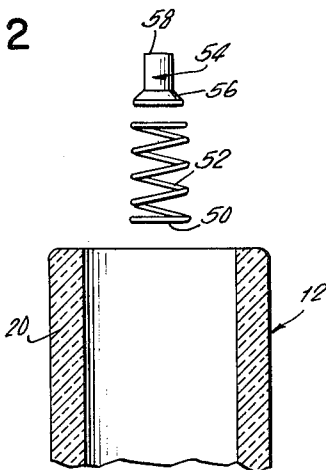


FIG. 4

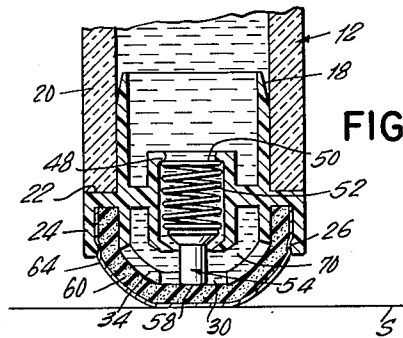
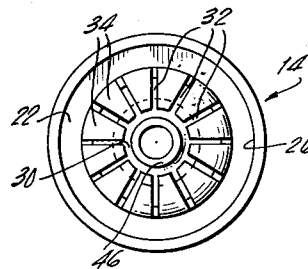


FIG. 5



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DAUBER HAVING DOME-SHAPED COVER SUPPORT

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2 Claims. (Cl. 15—566)

This invention relates to an applicator adapted for use in applying medications, cosmetics, polish, paints, ink, and other fluids of various viscosity on appropriate surfaces and is co-pending with my U.S. application, Serial No. 856,424, filed December 1, 1959, for "Dauber," now Patent No. 3,084,375.

An object of this invention resides in the provision of means for facilitating the application of fluids to appropriate surfaces and for providing means for holding a resilient cover in a substantially dome-like shape while permitting depressing of the cover to open a valve for permitting fluid to reach the cover which serves as an applicator surface.

Another object of this invention resides in the provision of a novel valve actuating means which is automatically actuated and adapted to control the flow of fluids from the applicator for obtaining an even flow of fluid onto the appropriate surface, independent of the contour or shape of the surface so that the fluid flow may be conveniently had onto the outer cover of the applicator in a manner facilitating the application of fluid into crevices, corners, and into other spaces where access is difficult in an even manner.

One of the disadvantages of prior art daubers and applicators is that the cover, which is made of a porous resilient material, such as foam rubber, becomes deformed and often loses the desired convex shape thereof. In order to maintain this dome-like convex shape, various inserts of sponge or foam material, reservoirs, or the like have been employed, but likewise these materials often become deformed, become logged with fluid, or deteriorate during the use thereof so that the cover will not maintain the desired dome-like shape. Further, it is often very difficult to stretch the cover across a resilient deformable member or insert formed of sponge or the like so that in order to avoid the necessity of use of such reservoir or insert and to permit the use of a valve mechanism which is capable of more even control of flow of fluids since no reservoir need be provided, there is utilized a cover support of dome-like shape and resilient by reason of the fact that there are a plurality of slots formed in the relatively thin sheet material from which the dome-shaped support is constructed.

A further object of the invention resides in the provision of an applicator having formed in one piece a body having a valve housing, a projecting portion for fitting in the neck of a bottle or other fluid container, a cover support, and a retaining ring, which is so arranged as to permit the metering of an even flow of fluid for use as a dauber or applicator for medications or cosmetics, which may be used for daubing shoe polish, ink or paints, yet which is very inexpensive to manufacture since it requires only one main body part.

Still further objects and features of this invention reside in the provision of applicator which not only is inexpensive to manufacture and simple to use, but which yields the unexpected advantage of permitting the metering of fluid of various viscosities in a very even and automatic manner thereby preventing waste of fluid contained therein.

These, together with the various ancillary objects and features of this invention, which will become apparent as the following description proceeds are attained by this

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applicator, a preferred embodiment of which has been illustrated in the accompanying drawing, by way of example only, wherein:

FIG. 1 is an elevational view of a dauber constructed in accordance with the present invention as installed in conjunction with the container forming a part of the dauber;

FIG. 2 is an exploded longitudinal sectional view of the dauber;

FIG. 3 is a longitudinal sectional detail view of the dauber illustrating the valve member in a closed position;

FIG. 4 is a view similar to FIG. 3 but illustrating the valve member in an open position; and

FIG. 5 is a top plan view of the dauber with cover removed.

With continuing reference to the accompanying drawings, wherein like reference numerals designate similar parts through the various views, reference numeral 10 is used to generally designate the dauber comprising the present invention. This dauber includes a container 12, in which a body 14 is fitted. The body 14 includes a projecting portion 16 of generally cylindrical shape, having a tapered lower end 18 for convenience of threading the projecting portion 16 in the neck 18 of the container 12. Further, the body 14 includes a retaining ring 22 which is integrally molded with the projecting portion 16 and includes an outwardly projecting flange 24 provided with a swaged lip 26.

Integrally formed with the body 16 is a dome-shaped cover support 28 which has a central aperture 30 there-through and which is provided with a plurality of radially spaced slots 32 therein which divide the upper portion of the dome-shaped support 28 into a plurality of wedge-shaped segments 34. Because the material from which the body 14 is formed such as polyethylene, polypropylene, polystyrene, or other molded synthetic plastic materials, including polyurethane, the configuration including the slots and the wedge-shaped segments 34 which are not supported but rather are cantilever in construction, the dome-shaped cover support 28 is resilient in its construction.

Inwardly extending from the dome-shaped support 28 and concentric with the dome-shaped support 28 and the retaining ring 24 is a flange 38 which carries a generally cylindrical shape valve housing 40.

The valve housing 40 has an end wall 42 at the upper portion of the valve housing provided with a tapered housing 44 therein forming a valve seat as at 46. The lower end of the valve housing 44 is provided with a flange 48 for forming a seat for the lower end 50 of a coil spring 52 which normally biases a valve member 54 having a tapered portion 56 into a valve-closed position as shown in FIG. 3. The valve member 54 includes a plunger portion 58 which is adapted to extend through the tapered opening 44 and through the aperture 30 so that a cover member 60 which is stretched over the valve support member 28 and held in place by the retaining ring or loop 26 can be depressed while also slightly depressing the wedge-shaped section 34 so that the valve is opened and fluid is permitted to flow from the container 12 through the valve housing 40, past the valve and through the opening 44 through the apertures and through the slots 32 onto the inner surface 62 of the cover 60. The cover 60 is formed of a foam rubber material over which there is a layer of nylon brushed knitted fabric 64 or any other suitable material. As soon as the cover is released from its application upon the surface S, the valve will close preventing any further fluid from passing into the porous material of the cover 60 and from the nylon brush knitted fabric 64 onto surface S.

Of course, in lieu of the separate spring and valve member as shown in the drawings, a valve member of the type

shown in the co-pending application Serial No. 241,862, filed December 3, 1962 for "Dauber Having Internal Compressed Body" may be used. Likewise, a valve member of the type shown in the co-pending application Serial No. 28,403, filed May 11, 1960 for "Process of Forming a Valve Member" may be employed.

In addition to the foregoing, in lieu of the spring 52, a spiral or other shaped plastic spring may be employed.

In use, with the body 14 installed in the neck 20 of the container 12, the dauber is utilized by pressing on the surface S the cover 60 so that the cover engages the plunger 58 depressing the valve member 54 so as to permit fluid flow into the space 70 and through the aperture 30 and slots 32 so as to provide suitable coverage to the cover 60 not heretofore achieved by daubers having only a single opening for fluid flow. Then, the dauber may be used in the obvious manner for applying an even coating of fluid onto the surface S.

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 present invention.

I claim:

1. An applicator comprising a body including a retainer ring having a projecting portion, a resilient dome-shaped cover support integral with said body and inwardly concentrically disposed with respect to said retainer ring, a cylindrical valve housing inwardly concentrically disposed of said support, said housing having an upper end wall having an opening therein forming a valve seat, said housing having a flange at the open lower end thereof, said support having an aperture therethrough in alignment

with said opening, a valve member movably mounted in said housing, spring means in said housing engaging said flange and normally urging said valve member to a closed position, a porous resilient cover secured to said ring and resting on said support, said valve member including a plunger, said support and said cover being depressible so that said plunger extends through said aperture and said cover can move said valve member into an open position.

2. An applicator comprising a body including a retainer ring having a projecting portion, a resilient dome-shaped cover support integral with said body and inwardly concentrically disposed with respect to said retainer ring, said support having a plurality of radial slots therethrough dividing said support into a plurality of wedge-shaped segments, a cylindrical valve housing inwardly concentrically disposed of said support, said housing having an upper end wall having an opening therein forming a valve seat, said housing having a flange at the open lower end thereof, said support having an aperture therethrough in alignment with said opening, a valve member movably mounted in said housing, spring means in said housing engaging said flange and normally urging said valve member to a closed position, a porous resilient cover secured to said ring and resting on said support, said valve member including a plunger, said support and said cover being depressible so that said plunger extends through said aperture and said cover can move said valve member into an open position.

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