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Moore

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[54] **LIQUIDS AND FLUIDS DISPENSING APPLICATOR ASSEMBLY**

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[51] **Int. Cl.** **A45d 24/22**

[58] **Field of Search** 132/112–116; 285/177, 235, 260

[56] **References Cited**

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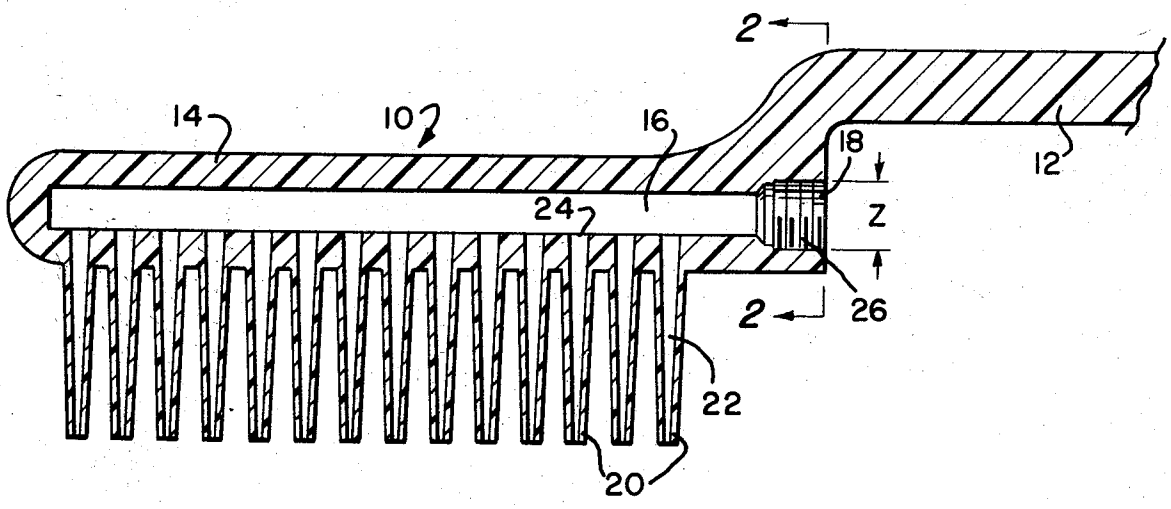
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[57] **ABSTRACT**

The assembly comprises a comb having hollow teeth in fluid communication with a fluid conduit formed in the spine of the comb. The conduit opens on an aperture which threadedly receives threaded necks of shampoo containers, and the like, or, selectively, a threaded coupling end of a flexible hose.

3 Claims, 5 Drawing Figures



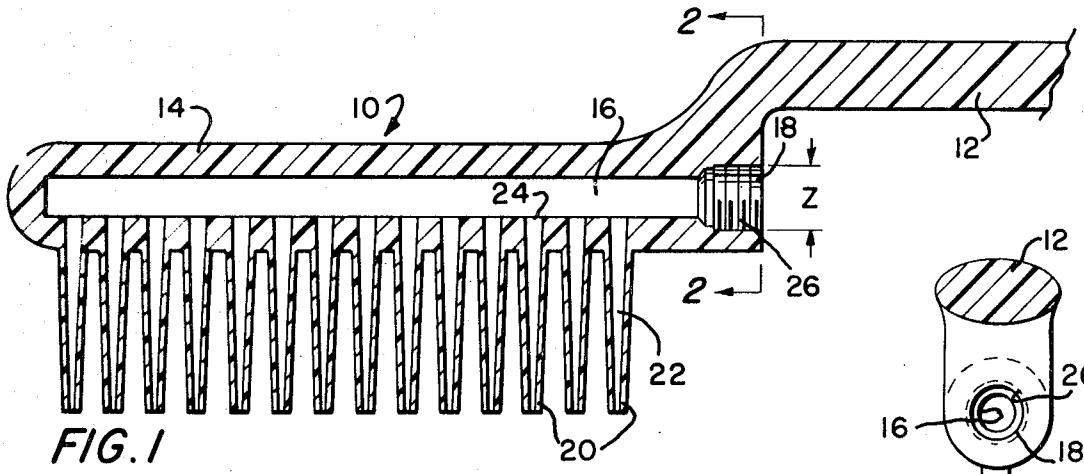


FIG. 1

FIG. 2

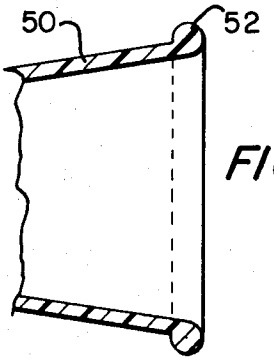


FIG. 4

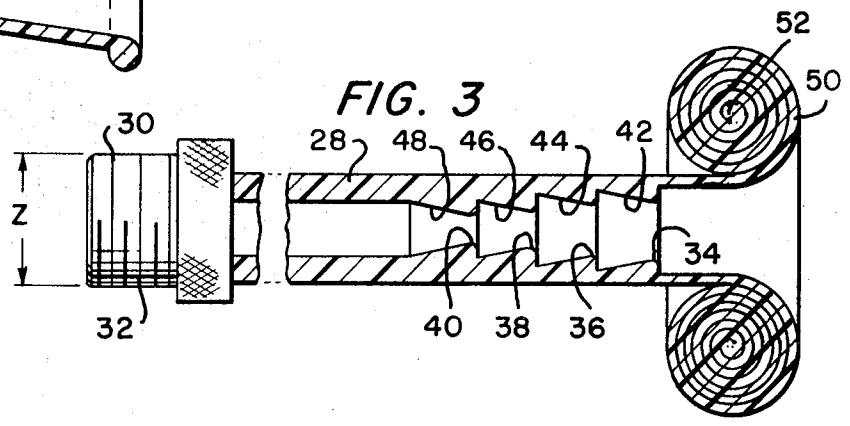
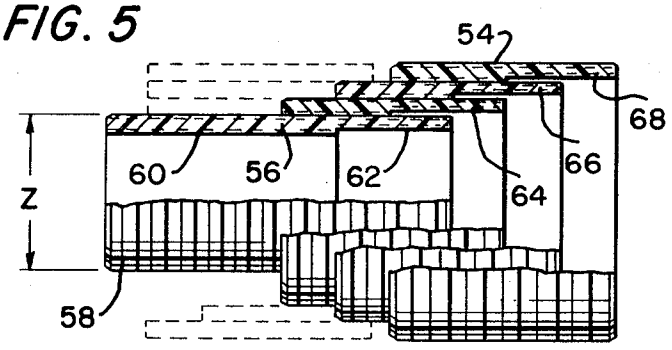


FIG. 3

FIG. 5



LIQUIDS AND FLUIDS DISPENSING APPLICATOR ASSEMBLY

This invention pertains to applicator assemblies for dispensing liquids and for conducting fluids therethrough, and in particular to an applicator assembly of the type noted especially fitted for universal application and use, and incorporating a comb.

It is already known in the prior art to form hollow teeth in a comb for the more efficient dispensing of fluids, from the teaching of U.S. Pat. No. 3,101,086; issued Aug. 20, 1963; to S. S. Di Vito; for instance. Such prior teaching, however, most often has no provisioning on the comb for a rigid handle which is so necessary to competent use.

There is some prior art, U.S. Pat. No. 3,376,065, being typical, which does disclose the use of an integral handle for the hollow-tooth comb, but in such art there is either no provisioning or no suggestion of the use of a flexible hose. Yet, the provisioning and accommodation of a hose with a hollow-tooth comb-type dispener is virtually a necessity.

The primary purpose of the hollow-tooth comb-type dispenser is to insure the penetration of the fluid dep into the scalp or skin of the subject. Now, this being so, it is no less necessary that washing or drying lfuids also be facilely accommodated for the same deep penetration — efficiently to purge and dry the scalp or skin.

It is an object of this invention to answer the needs left unfilled by the prior art fluid dispensing applicators. It is another object to cure the defects found in the prior art fluid dispensers. Specifically, it as an object of this invention to set forth an applicator assembly for dispensing fluids, and for conducting fluids therethrough, comprising an elongated comb; said comb having a rigid handle at one end thereof, a spine portion co-extensive of an contiguous with said handle, and a pluraltiy of teeth depending perpendicularly, relative to said handle, from the other end thereof; said comb further having a conduit formed within said spine portion; each tooth having a passageway formed therein which opens at one end onto said conduit and which opens at the end opposite on the depending termination of said tooth; said comb also having at least one aperture formed therein, intermediate the ends thereof, which opens onto said conduit; said aperture having means for threadedly engaging a threaded coupling a flexible hose; said hose having first coupling means on one end thereof, for threadedly engaging said aperture, and second coupling means on the opposite end thereof for effecting engagement thereof with a souce of fluid; and a universal coupler, having a plurality of coaxially and threadedly engaged coupling sleeves of discrete cross-sectional dimensions, one of said sleeves having threads formed therein and a cross-sectional dimension which complements said aperture and accommodates threaded engagement of said one sleeve with said aperture.

Further objects and featues of this invention will become more apparent by reference to the following description taken in conjunction with the accompanying FIGS. in which:

FIG. 1 is a longitudinal, cross-sectional view of the novel hollow-tooth comb of the applicator assembly, according to the invention;

FIG. 2 is an end view of the conduit aperture, taken along section 2—2 of FIG. 1;

FIG. 3 is a discontinuous, mostly cross-sectional and longitudinal view of the flexible hose of the novel applicator assembly;

FIG. 4 is a fragmentary view, in cross-section, of the compliant-sleeve coupling end of the hose of FIG. 3, the same being shown in rolled-out disposition; and

FIG. 5 is longitudinal or axial cross-sectional view of the inventive universal coupler of the novel applicator assembly, according to the invention.

As shown in FIG. 1, the novel applicator assembly comprises a comb **10** having a rigid handle **12** (only a portion of which is shown) and a spine **14**, the spine being co-extensive of said handle **12** and contiguous therewith. The spine **14** has a conduit **16** formed therein, and the comb **10** has at threaded aperture **18** formed therein substantially whereat the handle **12** and the spine **14** meet, said aperture **18** opening onto the conduit **16.**

A plurality of teeth **20** depend from the comb **10,** perpendicularly from the spine **14** and halde **12,** and each of the teeth is hollow; the same have a passageway **22** formed therein which communicates, at **24,** with the conduit **16.**

Conduit **16,** shown in an end view in FIG. **2,** has a threaded surface formed therein at **26** for threadedly engaging a source of fluid, and has a prescribed inside diameter here represented as "Z."

Referring now to FIG. **3,** the flexible hose **28** can be seen in cross-section. Hose **28** has a first coupling **30** at one end thereof, the latter having a knurled annulus, and comprises means (not shown) accommodating both sealing and rotation of the coupling **30** about the hose **28.** Such end couplings are well known in the art, so further discussion thereof is deemed not necessary here, however, coupling **30** contemplates such a component having external threads **32,** ahd having an outside diameter of "z" dimension, which complement the threads and diameter of aperture **18.** Hose **28,** according to this embodiment, is formed of plastic. However, rubber and like flexible material could well be used.

Adjacent to one end of hose **28,** and internally thereof, are formed a plurality of diverse-diameter ribs **34, 36, 38** and **40.** A complementary plurality of tapered surface annuluses recede from the ribs, the annuluses bearing index numbers **42, 44, 46** and **48.** Any combination of a rib and an annulus will cooperate to engage a depending pipe-outlet of a faucet, or the like, to secure the hose end thereat. For wider-mouth engagement requirements, hose **28** further has a thinner gauge compliant sleeve **50** contiguous therewith. The sleeve **50** terminates in an annular ring **52** with which sleeve **50** is rolled up for storage. Such storage disposition is shown in FIG. **3,** whereas a fragmented end of sleeve **50** is shown rolled out in FIG. **4.** This compliant sleeve facilitates the fluid coupling of the hose **28** with the output pipe of a hair dryer, or the like.

From what is known in the prior art, it is customarily necessary to have a prescribed bottle, with a prescribed neck or throat size and thread, to threadedly engage the same with a hollow-tooth comb-type of applicator. Now, this is rather limiting, as the multitude of shampoos, rinses, scalp medicants, and the like which are available on the market are merchandised in a plurality of bottle types. What has been needed in the art is a universal type of coupler which will accommodate various supply throat sizes and threads to a fixed size and thread of admittance aperture, such as aperture **18.** To

this end, my invention comprises such a universal coupler having a plurality of throat or neck sizes and threads.

The universal coupler **54**, shown in FIG. **5**, comprises a base coupler sleeve **56** having an outside diameter of "Z" and having threads thereabout, at **58**, which complement the threads and diameter of aperture **18** (FIGS. **1** and **2**). Further, sleeve **56** has two sets of inside diameters and threads, at **60** and **62**, to accommodate coupling thereof with fluid sources of two diverse diameters and threads. Sleeves **64**, **66**, and **68**, coaxially and threadedly coupled to sleeve **56**, are similarly dimensioned and threaded for progressively large-mouthed fluid sources. The threaded cooperation of all the sleeves **56**, **64**, **66**, and **68** facilitates the retraction of given ones to allow coupling access to a prescribed one, so that all threaded surfaces of each of the sleeves can be made available for use. Such relative positioning or movement of the sleeves is represented by the dashed-line positionings in FIG. **5**.

Not unlike the prior art applicators, the instant applicator assembly insures the deep-down skin or scalp treatment with fluids, such as shampoos and the like, for human application, and flea and/or tick ablutions and the like for aminal application. Further, however, the applicator assembly here presented and disclosed teaches the use of a flexible hose, and sets forth coupling accommodation of the hose, for the necessary hygienic flushing of the skin and scalp in the same penetration as effected by the treatment fluids. In addition, the novel comb here set forth incorporates a rigid handle so that, if the treatment fluid comprises a flexible bottle, the latter can be deployed in threaded engagement with aperture **18** and squeezed against the handle **12** to cause the discharge of the fluid from the bottle. Often enough it will be sufficient to so engage the container or bottle and allow the fluid to flow therefrom, freely, into conduit **16**. Then, to flush the scalp — and to purge the comb as well — it is only necessary to thread coupling **30** into aperture **18**, and secure the other end of hose **28** to a cource of water, or whatever. Then too, as noted, the compliant sleeve **50** will facilitate the attachment of the comb to a hair dryer, or the like.

While I have described my invention in connection with a specific embodiment thereof, it is to be clearly understood that this is done only by way of example and not as a limitation to the scope of my invention as set forth in the objects thereof and in the accompanying claims.

I claim:

1. An applicator assembly for dispensing fluid, and for conducting fluids therethrough, comprising:

an elongated comb;

said comb having a rigid, imperforate handle at one end thereof, a spine portion co-extensive of and contiguous with said handle, and a plurality of teeth depending perpendicularly, relative to said handle, from the other end thereof;

said comb further having a conduit formed within said spine portion;

each tooth having a passageway formed therein which opens at one end onto said conduit and which opens at the end opposite on the depending termination of said tooth;

said comb also having at least one aperture formed therein, intermediate said plurality of teeth and said handle, which opens onto said conduit;

said aperture having means for threadedly engaging a threaded coupling; and

a universal coupler, in threaded engagement with said aperture, said coupler having a plurality of coaxially and threadedly engaged coupling sleeves of discrete cross-sectional dimensions, one of said sleeves having threads formed therein and a cross-sectional dimension which complement said aperture and which effect said threaded engagement of said coupler with said aperture; wherein

said sleeves of said universal coupler each have a plurality of not less than three threaded surfaces for effecting engagement thereof with sources of fluid; and

said threaded surfaces of said plurality thereof comprise a threaded inside diameter and a threaded outside diameter.

2. An applicator assembly, according to claim **1**, wherein:

all sleeves of said universal coupler, excepting one, are of common length.

3. An applicator assembly, according to claim **1**, wherein:

said one sleeve of said universal coupler is of greater length than any other sleeve of said universal coupler.

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