

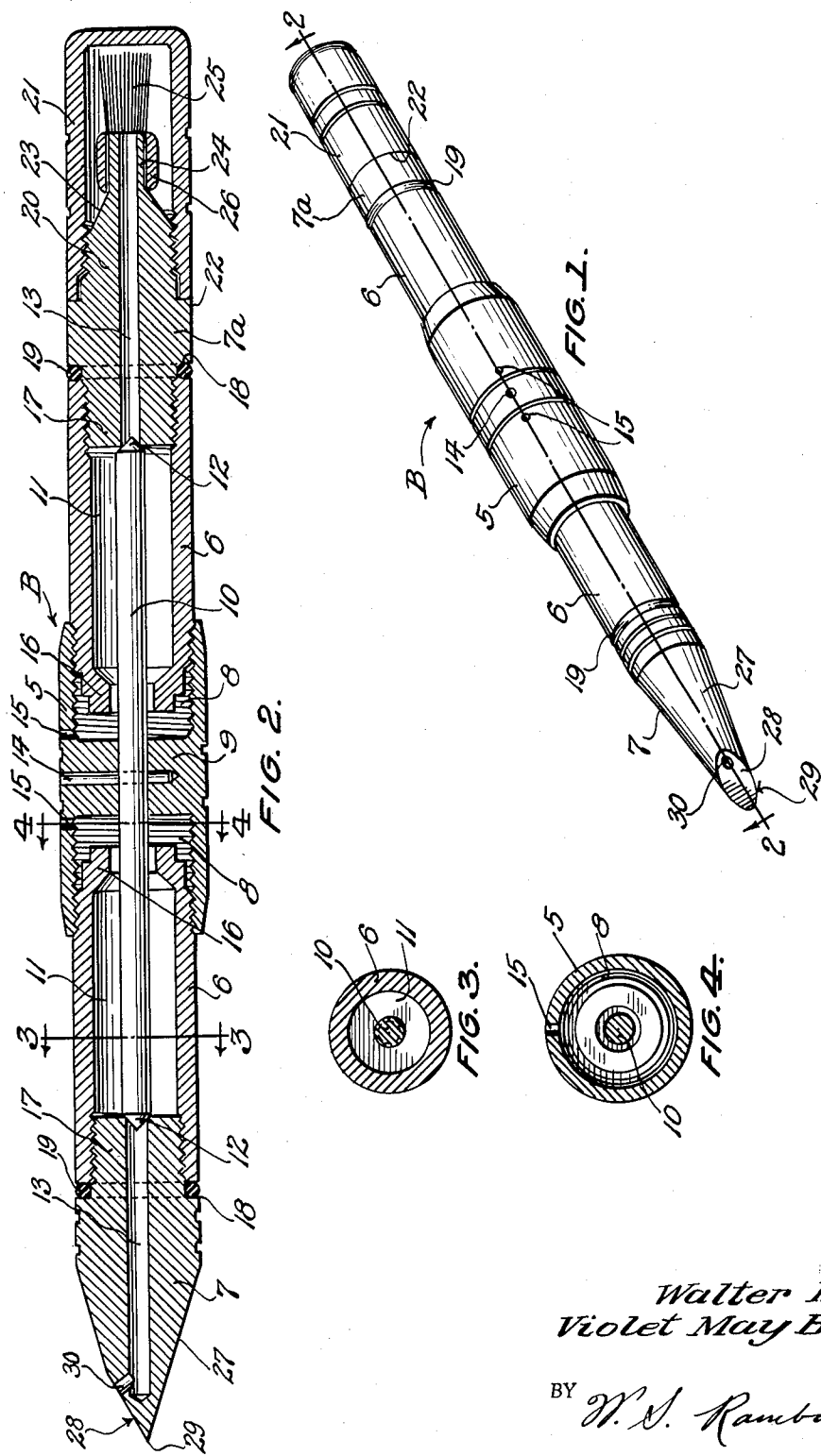
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W. HOWARD ET AL

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FOUNTAIN APPLICATOR FOR DISPENSING LIQUIDS

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INVENTORS
Walter Howard
Violet May Baugher

BY *W. S. Rambo*
ATTORNEY

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FOUNTAIN APPLICATOR FOR DISPENSING LIQUIDS

Walter Howard, Columbus, and Violet May Baugher,
Danville, Ohio

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This invention relates to fountain-type holders for receiving and dispensing in controlled quantities liquids and other mobile liquid-like materials. While our invention is not so limited in its field of use, it is especially useful in applying liquid polish to fingernail surfaces and, also, in applying liquid-like solvents to the nails in the removal of previously applied polishes.

It is an object of the invention to provide a fountain-type applicator formed to include an elongated cylindrical barrel structure carrying at one end thereof a brush and at its other end a rigid, generally conical, tapered extension having a planar scraping surface, the barrel structure immediately of its length being formed with a pair of integral, longitudinally disposed, and relatively spaced chambers for the reception of different fluidic materials adapted to be received by and dispensed from the applicator, restricted valve-controlled passage means being provided for regulating independently of each other the volumetric flow of said fluidic materials to the brush and scraping terminals of the appliance.

Another object of the invention is to provide an inexpensive and portable lightweight dispenser of simple design having the general form and dimensions of a pocket-carried fountain pen, the barrel structure of the dispenser being formed with chambers for the reception and storage in spaced separate order of fluidic materials used as fingernail polish and polish removers.

A further object is to provide an appliance of this type in which atmospheric pressures are maintained at all times on the liquids retained in the spaced chambers of the barrel structure to insure proper flow thereof through restricted passageways leading to the ends of the barrel structure.

A still further object is to provide restricted outlet passageways in the barrel structure of a fountain applicator of the character indicated, said passageways leading from the internal liquid-containing chambers of the barrel structure to the opposed brush and cuticle-removing ends thereof.

Another object is to provide an applicator of this character wherein the barrel structure is formed to include a center section having threaded connection at the opposite ends thereof adapted for uniting the same with the inner ends of a pair of longitudinally aligned chamber sections, the latter, in turn, having their outer ends threaded to receive separably a pair of terminal sections, one of said terminal sections being formed with bristles to constitute a brush applicator, and the other complementary section terminating in a conical extension adaptable for cuticle removal and other nail-manicuring operations, the said terminal sections including axially disposed passageways of restricted cross-sectional area for conducting liquids, or liquidlike materials, from the chambers of said chamber sections to the brush and conical outer ends of said terminal sections, said center section being also formed with small-diametered atmospheric vents communicating with the liquid-holding chambers of the chamber sections of the barrel structure to provide for free

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gravitational outflow of liquids therefrom, said center section being further formed with a valve stem fixed in its axis and extending longitudinally thereof, the opposite ends of the stem being tapered for cooperation with the inner valve-seating and chamber-communicating ends of the axial passageways of the terminal sections, said vents and valve stem serving to provide for regulated valve-controlled flow of the liquids contained in said chambers into said passageway for delivery to the applying ends of said terminal sections.

For a further understanding of this invention, including additional objects and advantages thereof, reference may now be had to the following description and the accompanying drawing, wherein has been set forth a single preferred embodiment of our improved fountain-type liquid-applying device.

In the drawing:

Fig. 1 is a perspective view of the fountain applicator of the present invention;

Fig. 2 is a vertical longitudinal sectional view taken therethrough;

Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 2; and

Fig. 4 is a similar view on the line 4—4 of Fig. 2.

As shown in the above figures of the drawing, our improved fountain-type applicator comprises a composite barrel structure B formed from a plurality of relatively separable but interconnected, longitudinally aligned sections. In the specific construction under consideration, the barrel structure is composed of a center section 5, a pair of reservoir sections 6 detachably joined with opposite ends of the center section, and a pair of terminal sections 7 and 7a which are separably united with the outer ends of said reservoir sections. These sections are preferably cylindrical in their exterior configuration, and may be formed from any suitable material, such as lightweight metals, molded synthetic resins, or the like.

The center section 5 as herein illustrated possesses a somewhat greater diameter than the remaining sections of the barrel structure, and is formed with longitudinally extending and aligned, internally threaded sockets 8 separated by a transverse web 9. The web is axially bored for the reception of a longitudinally extending valve stem or rod 10 which at its ends projects beyond the center section and extends axially through liquid-holding chambers 11 formed in the reservoir section 6. The ends of the valve rod or stem are tapered, as at 12, for seating engagement with the inner ends of restricted, axially formed passageways 13 provided in the terminal sections 7 and 7a.

The stem or rod 10 is held against rotation in this instance by a pin 14 which extends transversely of the web 9 of the center section 5. Also, the center section is provided on opposite sides of the web 9 with a pair of restricted vent openings 15 which establish communication between the sockets 8 and the atmosphere. In the form of the invention illustrated, the inner ends of the reservoir sections are externally threaded for interfitting separable engagement with the internal threads of the sockets 8 of the center section. Also, said inner ends of the reservoir sections are partially closed, as at 16, in a manner providing passages 17 around the valve stem 10 to admit air, obtained by way of the vents 15, into the reservoir section chambers 11.

The outer ends of the chambers 11 of the reservoir sections are internally threaded for the reception of externally threaded plugs 17 formed with the inner ends of the terminal sections 7 and 7a. These plugs terminate in shoulders 18, and between these shoulders and the adjoining outer edges of the reservoir sections there are interposed annular gaskets 19.

In this instance, the terminal section 7a is formed outwardly thereof with a shank 20, the latter being exter-

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nally threaded for removable engagement with a cap member 21, the open end of the latter bearing against a shoulder 22 at the inner end of the shank 20. Beyond its externally threaded region the shank is forwardly and conically tapered, as at 23, and terminates in a cylindrical extension 24. The outer surfaces of the latter form a seat for the reception of the circularly arranged inner ends of the bristles of an applicator brush 25, the bristles being clamped on the extension 24 by a band shown at 26. The bristles of the brush 25 project beyond the extension 24 for free flexing movement on a liquid-applying surface over which the brush is drawn when the cap member 21 is removed from the appliance.

The axial passageway 13 of the terminal section 7a extends completely through the latter, as shown in Fig. 2, so that a liquid contained in the reservoir section associated therewith may be transmitted to the brush bristles under controlled flow. It will be evident that by partially rotating the reservoir section 6 to which the brush-carrying terminal section is joined relative to the center section 5, the inner end of the passageway 13 in the section 7a may be adjusted toward or away from the adjoining end of the valve stem 10, thus regulating volumetrically the flow of liquid into the passageway of the section 7a for delivery to the brush 25. Similar control is provided in regulating liquid flow into the passageway of the section 7.

When the appliance is used as a convenient manicuring accessory for applying liquid polish or the like to fingernails or in removing previously applied polish, the section 7 is formed to provide a conically tapered outer end 27. In this instance the end 27 includes at the tip thereof a flat surface 28 having marginal edge portions 29 which may be used in controlling cuticle development on the nails. In this preferred form of the invention the axial passageway 13 in the section 7 terminates in the closed tip end thereof in an angularly offset branch 30 which opens to the surface 28, so that a liquid polish-removing solvent may be delivered under controlled flow to the surface 28 for convenient application to the nails.

In view of the foregoing, it will be apparent that the present invention provides in one of its specific embodiments a simple, lightweight, and readily manipulated appliance for applying liquid polish at a controlled rate of flow to the bristles of the applicator brush. The operation can be performed quickly and accurately without spillage or waste of the liquid, and the appliance avoids the necessity for a manicurist's dipping a brush repeatedly into a relatively small bottle as is now the usual practice in applying nail polish. Similar convenience is obtainable in the use of the other end of the appliance in dispensing regulated quantities of a polish remover. Not only is the liquid polish-removing compound dispensed under controlled flow, but a conveniently employable means is provided in the form of the tapered extension 27 and the

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edges 29 thereof for removing from the nails undesired cuticle growths.

While we have shown and described the presently preferred form of our improved fountain applicator, nevertheless it will be understood that the construction is subject to certain variations or modifications as practice may prove to be desirable or expedient, and, therefore, we reserve the right to employ all such variations, modifications, or sub-combinations falling within the scope of the following claims, and to adapt the invention to all uses to which its construction may prove of value.

We claim:

1. A fountain applicator for receiving and dispensing liquids, comprising: a barrel structure composed of a center section and a pair of longitudinally aligned, internally chambered, relatively separable, reservoir sections; threaded means uniting the adjoining ends of said center and reservoir sections, so that one of said reservoir sections is joined with each end of said center section; applicator appliances carried by the outer ends of said reservoir sections, said appliances being formed with longitudinally extending restricted passageways leading from internal liquid-holding chambers in said reservoir sections to the exterior of said applicator appliances; a valve stem rigidly carried by said center section axially and longitudinally thereof, said stem projecting through the chambers of said reservoir sections and having its opposite ends terminated in liquid flow-controlling relationship with said passageways at the ends thereof communicating with said reservoir section chambers, relative rotation of said center and reservoir sections as provided by said threaded means serving to regulate the spacing of said stem with respect to said passageways; and restricted vent means provided in said center section establishing atmospheric pressures in said liquid-holding chambers.

2. A fountain applicator as defined in and by claim 1, and wherein the applicator appliance on one end of the barrel structure embodies a brush and the complementary appliance on the other end of said structure embodies a conical extension having the vertex region thereof formed with a flat surface in which the passageway of said complementary appliance terminates at its outer end.

3. A fountain applicator as defined in and by claim 1, and wherein the applicator appliances have externally threaded inner ends arranged to be separably received in internally threaded outer end portions of the liquid-holding chambers of said reservoir sections.

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