

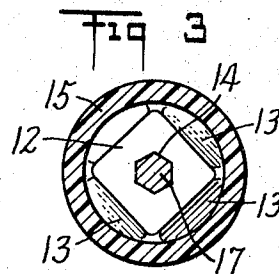
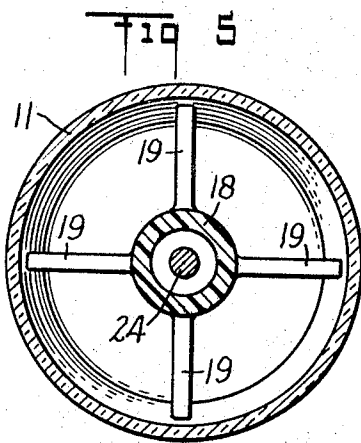
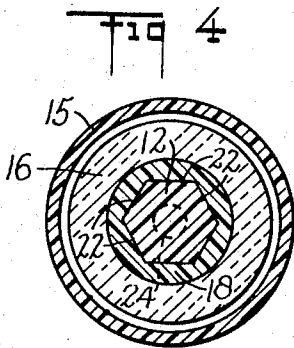
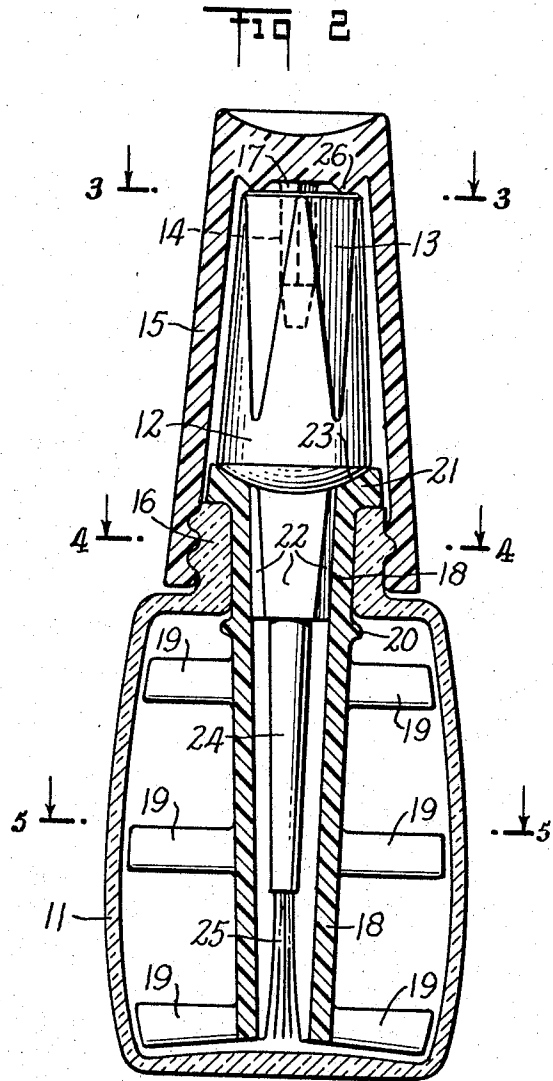
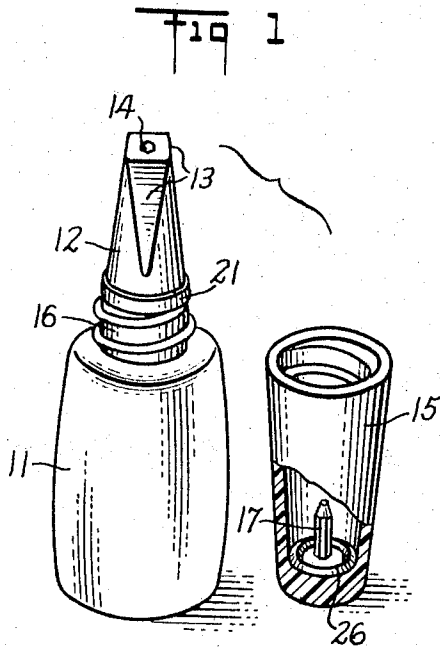
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CONTAINER HAVING APPLICATOR AND ROTATABLE STIRRER

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CONTAINER HAVING APPLICATOR AND ROTATABLE STIRRER

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ABSTRACT OF THE DISCLOSURE

A closable container for fluids in which a rotatable brush applicator is keyed with a rotatable stirrer of congruent cross section in mouth portions of the container and further has a laterally extending curved surface matching a cooperating curved surface of the stirrer to seal the mouth of the container. Separate closure means for the container may be keyed with the rotatable applicator.

This invention relates to dispensing containers for fingernail enamel and the like, and relates particularly to dispensing containers having a device for mechanical agitation of the contents thereof and an arrangement of applicator and closure means wherein the applicator means extend uniformly into the dispensing container whether the closure means are in open or closed position.

Conventional dispensing containers for fingernail polish generally comprise applicator means, such as a brush, fixed in closure means for the container, such as a screw cap. Normally, with the closure means in closed position on the container, the applicator means extend to their maximum depth into the contents of the container. Conversely, with the closure means in open position the applicator means extend into the container means to their most shallow depth. Obviously, as the contents of the container are used, a point is reached at which the applicator means no longer extend into the fingernail enamel with the closure in open position. To utilize the remaining enamel, the user is required either to close the container completely, and then open it again for purposes of application, or to tilt or tip the bottle until the applicator means extend into the remaining enamel. Both of these alternatives are time consuming and inconvenient.

It is an object of the present invention to provide a dispenser container for fingernail enamel or the like having separate, but cooperating, closure and applicator means of a type wherein the applicator means extend uniformly into the contents of the dispensing container whether the closure means are in open or closed position.

It is a further object of the present invention to provide cooperating closure and applicator means which further cooperate with agitating means in a dispensing container.

Containers provided with agitating devices are known from commonly owned copending application Ser. No. 430,827 filed Feb. 8, 1965. Devices fitted within a dispensing container for fingernail enamel, and adapted mechanically to agitate the contents of the container, are of particular utility when used for fingernail enamels containing large amounts of heavy pigments, such as pearlescent enamels, in which the pigments may tend to settle in the container between consecutive uses of the container. Enamels of this type are best agitated prior to each use for dispersion of the pigment throughout the enamels.

A better understanding of the present invention and of its many advantages will be had by referring to the accompanying drawings in which FIG. 1 is a perspective view, partly in section, showing a dispensing apparatus

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according to the invention, including a container, applicator means, and a closure for said container;

FIG. 2 is a side sectional view of a dispensing apparatus according to the invention;

FIG. 3 is a plan sectional view along line 3—3 of FIG. 2;

FIG. 4 is a plan sectional view along line 4—4 of FIG. 2; and

FIG. 5 is a plan sectional view along line 5—5 of FIG. 2.

Referring in detail to the drawings, in which like reference numerals are employed for like parts in the various figures, FIG. 1 shows container means 11, such as of glass, for containing fingernail enamel or the like, and having neck portion 16. Extending into neck portion 16 are applicator means 12, suitably conically tapered and provided with a plurality of planar portions 13 to facilitate gripping with the fingers. The top of applicator means 12 is provided with central cavity 14, conveniently of polygonal cross-section. Closure means, shown in FIG. 1 in removed position, comprise screw cap 15 threaded to engage with neck portion 16 of container 11. Cap 15 has in interior portions thereof projecting nib 17, suitably of a size and cross-section adaptable for snug insertion into cavity 14. Applicator means 12 and screw cap 15, thus, can be keyed to form a single unit by cavity 14 and nib 17.

FIG. 2 shows screw cap 15 in closed position on containing means 11 with projecting nib 17 extending into central polygonal cavity 14 of applicator means 12. Containing means 11 has agitating means rotatably mounted therein, said agitating means comprising a substantially cylindrical bearing 18 rotatably mounted in neck portion 16 of containing means 11. One or more stirring vanes 19 project from bearing member 18 so that when member 18 is rotated, vanes 19 mechanically agitate the enamel contents of container 11, thus aiding in dispersion of any pigment which may have settled in the contents.

Cylindrical bearing 18 is provided with suitable stop means such as flared portions 20 and 21 respectively located below and above neck portion 16 of container 11 to hold bearing member 18 in place with regard to vertical displacement. Between these stop means, that is in that portion of member 18 generally disposed within neck portion 16, interior portions of member 18 are of polygonal cross-section (as is best seen in FIG. 4). Applicator 12 is provided with plurality of planar faces 22 of a size and shape matching interior portions of member 18 so that applicator 12 and member 18 are cooperatively keyed together when applicator 12 is inserted through member 18 into container 11. Thus, when applicator 12 is rotated in container 11, member 18 is also rotated within neck portion 16 of container 11.

Applicator 12 and member 18 are also formed to have matched common area 23. Conveniently the matching surfaces are concave-convex curved surfaces of the same radius of curvature. Matching of the surfaces at 23 seals container 11 to inhibit the escape of volatile solvents from the enamel contents of the container. Also, the spherical contour of the matched surfaces aids in seating applicator 12 within member 18.

Further to aid seating and tight vapor-proof closure of container 11, the top interior of cap 15 may be provided with raised ring 26 which presses downwardly on applicator 12 as cap 15 is threaded on neck portion 16.

In those portions extending into container 11, applicator 12 suitably comprises ferrule 24 and brush 25 for application of the contents of container 11 to the fingernails.

As will be evident from inspection of FIG. 2, on unscrewing screw cap 15 by rotation, applicator means 12 will be rotated within container 11 because of the keying

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between projecting nib 17 of cap 15 and cooperating central cavity 14 of applicator means 12. Further, because of the keying of planar faces with cylindrical bearing 18, rotation of applicator means 12 will also cause rotation of bearing member 18 within neck 16, so that stirring vanes 19 are rotated and agitate the contents of container 11. Thus, by the time the user has unscrewed closure cap 15, the contents of container 11 have already been agitated and are in condition suitable for use. Since applicator means 12 and closure 15 are not permanently joined, removal of cap 15 still leaves applicator means 12 in position in container 11 with brush means 25 extending full depth into container 11.

If, at this stage, further agitation of the contents of container 11 is desired, means 12 may be rotated with planar faces 22 engaged with interior portions bearing member 18 to bring about further stirring by vanes 19.

FIG. 3 of the drawings is a plan sectional view along line 3—3 of FIG. 2 showing closure cap 15 and applicator means 12, planar portions 13 formed therein, shaped cavity 14, and projecting nib 17 keying cap 15 to applicator means 12.

FIG. 4 is a plan sectional view taken along line 4—4 of FIG. 2 showing cap 15 threaded onto neck portion 16 of container 11, and showing the engagement of shaped interior portions of cylindrical bearing 18 with planar surfaces 22 of applicator means 12.

FIG. 5 is a plan sectional view taken along line 5—5 of FIG. 2 showing stirring vanes 19 depending from bearing 18 rotatably mounted in container means 11. Cylindrical bearing means 18 have been shown in the figures as extending directly downward into containing means 11 beyond neck portion 16, as will be evident by reference to FIG. 2, so that bearing member 18 must be shaped to accommodate ferrule 24 and brush 25 of applicator 12. However, it will be understood that a variety of alternative embodiments for the stirring device may be employed, as disclosed in commonly owned copending application Ser. No. 430,827 filed Feb. 8, 1965 mentioned earlier and incorporated herein by reference.

What is claimed is:

1. In dispensing apparatus for fingernail enamel and the like comprising a container for holding said enamel,

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said container having a neck portion with an open top, closure means for said container cooperatively engaging with said neck portion thereof to cover said open top, and bearing means rotatably mounted in said neck portion and having stirring means thereon extending into said container, the combination which comprises applicator means separate from said closure means, said applicator means having an intermediate portion of cross-section congruent with a cross-section of said bearing means and cooperatively engaging with said bearing means whereby rotating said applicator means rotates said bearing means, said applicator means further having brush means below said intermediate portion and extending into said container and handle means above said intermediate portion adaptable to being grasped manually, said applicator means and bearing member further having matched laterally-extending surface portions adjacent said intermediate portion cooperating to seal said neck portion across the open top thereof, said matched surface portions comprising curved surfaces having substantially equal radii of curvature.

2. Apparatus according to claim 1 wherein said closure means are keyed with said applicator means, whereby rotating said closure means rotates said applicator means.

3. Apparatus as in claim 2 wherein said closure means and said applicator means have cooperating male and female members whereby said closure and applicator means are keyed.

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