March 19, 1963 D. ACKERMAN 3,081,769

COSMETIC APPLICATOR

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FIG. 1.

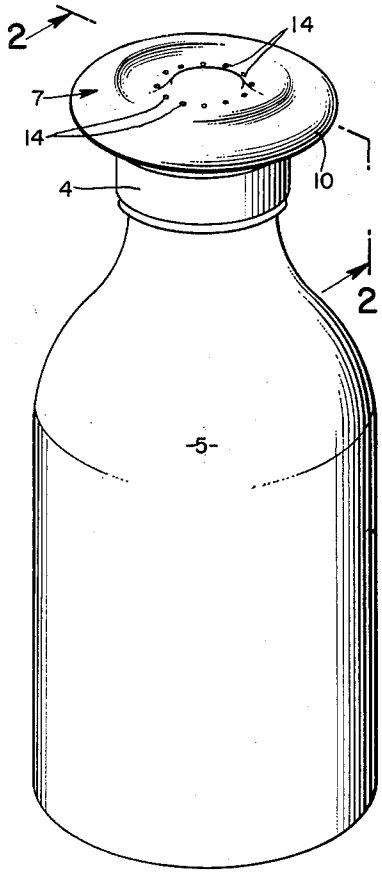


FIG. 2.

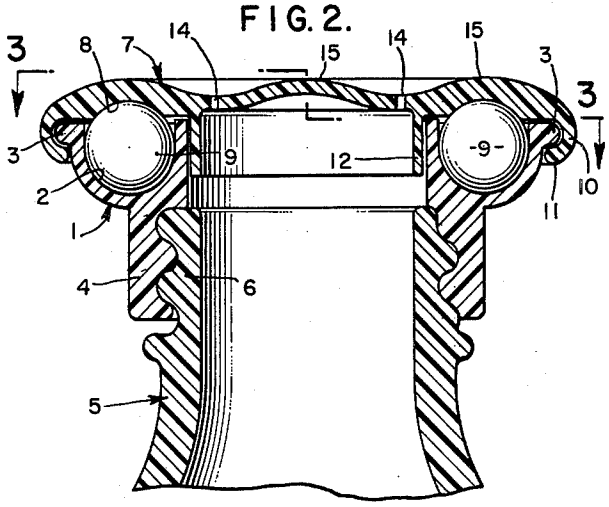
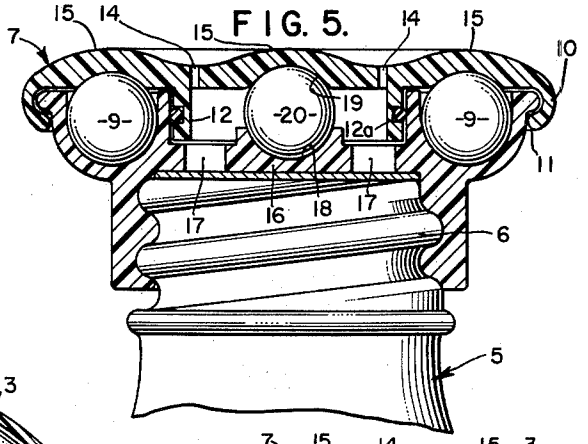


FIG. 5.



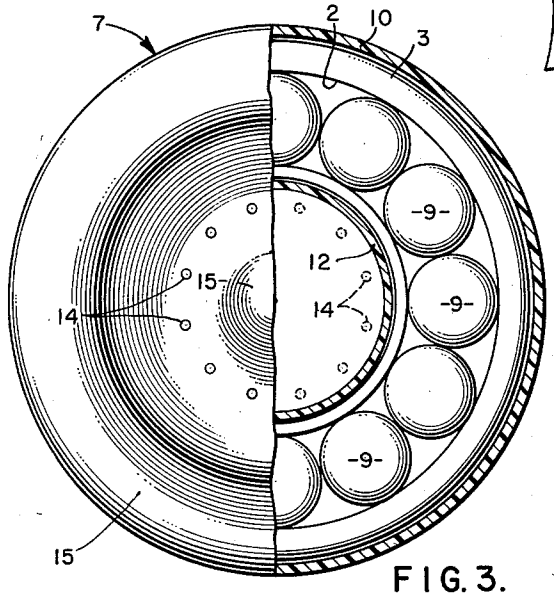


FIG. 3.

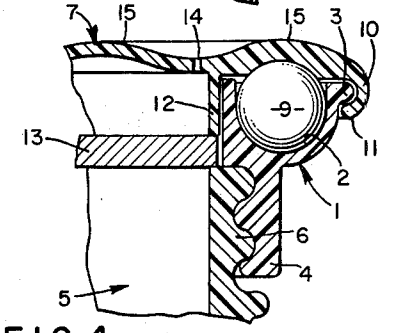


FIG. 4.

INVENTOR.
DOLLETTA ACKERMAN

BY Lyon & Lyon

ATTORNEYS.

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COSMETIC APPLICATOR

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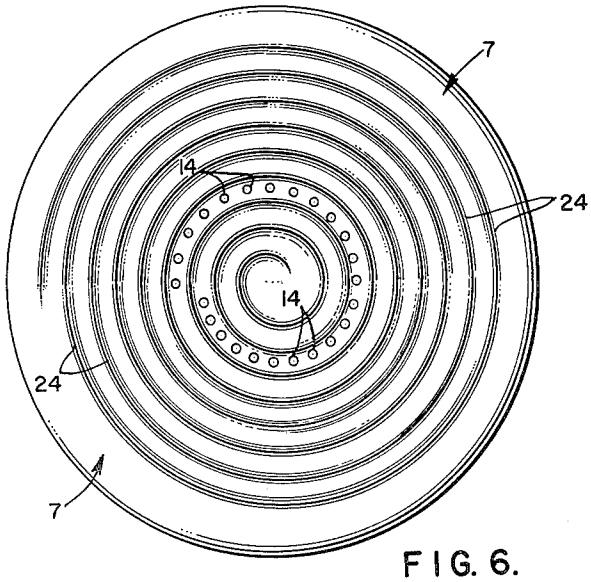


FIG. 6.

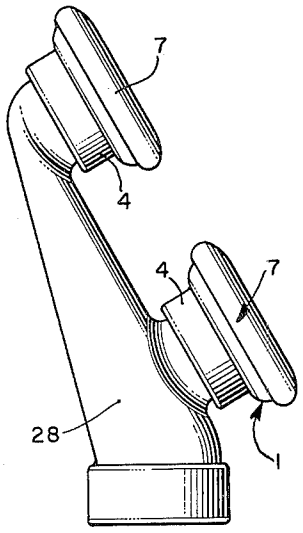


FIG. 9.

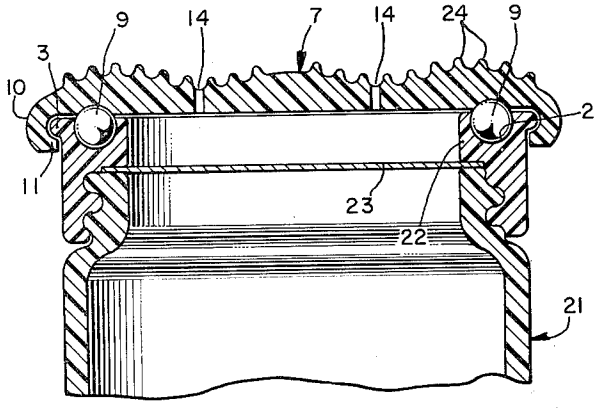


FIG. 7.

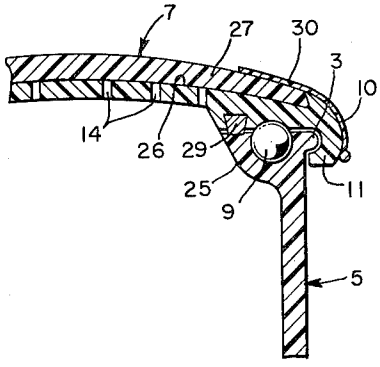


FIG. 8.

INVENTOR.
DOLLETTA ACKERMAN

BY Lyon & Lyon

ATTORNEYS.

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COSMETIC APPLICATOR

Dolletta Ackerman, 813 N. Orange Grove Ave., Hollywood, Calif.

Filed Sept. 18, 1961, Ser. No. 138,813
11 Claims. (Cl. 128—65)

This invention relates to cosmetic applicator, and included in the objects of this invention are:

First, to provide a cosmetic applicator which may be adapted for installation on various types of bottles and arranged for the application of liquid or semiliquid cosmetics, or medicaments, without the fingers of the user coming in contact with the liquid.

Second, to provide a cosmetic applicator which includes a novelly arranged ball bearing supported applicator head, which is readily rotated so that it may be rolled over the skin to effect a massaging action, and is provided with perforations for the discharge of a cosmetic so that the cosmetic may be rolled onto and worked into the skin.

Third, to provide a cosmetic applicator which may be readily and inexpensively formed of molded plastic parts, and incorporates a novelly arranged ball bearing raceway and snap-on cover.

With the above and other objects in view, as may appear hereinafter, reference is directed to the accompanying drawings in which:

FIGURE 1 is a perspective view of a container showing one form of the cosmetic applicator mounted thereon;

FIGURE 2 is an enlarged, fragmentary, sectional view thereof taken through 2—2 of FIGURE 1;

FIGURE 3 is a partial plan, partial sectional view thereof taken through 3—3 of FIGURE 2;

FIGURE 4 is an enlarged, fragmentary, sectional view similar to FIGURE 2, showing the arrangement of the applicator and the container when in the initial condition before use;

FIGURE 5 is a fragmentary sectional view similar to FIGURE 2 showing a modified form of the applicator;

FIGURE 6 is a top view of a modified form of the cosmetic applicator;

FIGURE 7 is a fragmentary, sectional view thereof taken through 7—7 of FIGURE 6;

FIGURE 8 is a fragmentary sectional view similar to FIGURE 7 showing a further modified form of the cosmetic applicator;

FIGURE 9 is a side view of a still further modified form of the cosmetic applicator.

Reference is first directed to FIGURES 1 through 4. In the construction here illustrated, the cosmetic applicator includes a ring member 1 having an axially directed ball raceway 2 in one end. Outwardly of the raceway 2 the ring member 1 is provided with a peripheral bead 3. Extending in the opposite direction from the ball raceway 2 is an internal screw-threaded nipple 4 for attachment to a container 5 having a mating externally screw-threaded mouth 6.

The ring member 1 is adapted to receive a cover member 7 having a ball raceway 8 confronting the ball raceway 2. The raceway 8 receives a ring of balls 9 so as to form a thrust bearing permitting free rotation of the cover member 7 with respect to the ring member 1 and container 5.

The cover member 7 is provided with a peripheral flange 10 having an inturned lip 11 which loosely overlies the peripheral bead 3 so as to retain the cover member 7 in place by permitting free rotation.

The cover member 7 is provided with an internal skirt 12 which confronts the extremity of the container 5. The skirt 12 is utilized to clamp a seal disk 13, as shown in

FIGURE 4, for the purpose of effecting an initial seal of the contents of the container.

Within the skirt 12 the cover member 7 is provided with a plurality of perforations 14 which permit discharge of the contents of the container 5 when the seal disk 13 is removed. The outer surface of the cover member 7 is provided with annular undulations 15.

Operation of the cosmetic applicator shown in FIGURES 1 through 4 is as follows:

The container 5 may contain any liquid or semiliquid cosmetic adapted for application to the skin of the user. Initially the rotatable cover member 7 is immobilized and the contents of the container 5 is sealed therein by reason of the engagement of the annular skirt 12 with the seal disk 13.

When it is desired to use the applicator, the ring member 1 is first unscrewed, the seal disk 13 removed, and the ring member 1 replaced. The undulations 15 may be such that a small quantity of cosmetic material may be held on the cover member 7. In use, the cover member 7 is applied to the skin of the user in an eccentric location so that as the container 5 is moved across the skin the cover member 7 is rotated. By reason of the fact that the radially outer portions rotate a greater distance than the radially inner portions of the cover member 7 and by reason of the undulations 15, there is produced a massaging effect which facilitates absorption of the cosmetic or facilitates even distribution of the cosmetic.

Reference is now directed to FIGURE 5. This construction is the same as the previously described construction except that the ring member 1 is provided with an internal partition 16 having perforations 17 therein.

At the center of the partition 16 there is formed a socket 18, and the central portion of the cover member 7 is provided internally with a mating socket 19. Between these sockets is positioned a central pivot ball 20.

The cosmetic applicator illustrated in FIGURE 5 operates in the same manner as the previously described applicator except that the cover member 7 is more fully supported.

Reference is now directed to FIGURES 6 and 7. The construction here illustrated is essentially the same as the first described structure except that the ring member 7 is adapted for connection to a wide mouth container 21, and for this purpose the ball raceway 2 is located on an internal flange 22 which overlies the mouth of the container 21. A seal disk 23 is interposed between the flange 22 and the container 21 so as to initially seal the contents. This construction is particularly adapted for the application of cold creams or other semiliquid cosmetics.

In the first described structure, the cover member 7 was shown as being relatively smooth except for the shallow undulations 15. In the constructions shown in FIGURES 6 and 7, the outer surface of the cover member 7 is provided with massaging ribs 24, which for the purposes of illustration are shown in spiral form but may be arranged in other patterns. It should be noted that the spiral ribs 24 may be incorporated in the first described, or other structures herein shown, as well as in the construction shown in FIGURES 6 and 7.

Reference is now directed to FIGURE 8. In the construction here shown, a modified ring member 25 is illustrated which is formed integrally with the container 5 but otherwise is similar to the previously described ring member.

In addition, the cover member 7 is shown as provided with a recess 26 in which is cemented or otherwise secured a porous elastomer pad 27. This modification of the cover member 7 is interchangeable with the cover members shown in the other figures of the drawings.

Reference is now directed to FIGURE 9. In this construction there is provided a manifold **28** which is adapted for connection to a container. Mounted on the manifold **28** is a plurality of ring members, each of which may correspond to the ring member **1** shown in FIGURES 1 through 4. With this arrangement a multiple massaging action may be obtained.

If the substance to be dispensed is highly fluid a seal may be required such as an O-ring **12***a* indicated in FIGURE 5, or a felt seal **29** as indicated in FIGURE 8. Also, if desired, any of the applicators may be provided with a snap-on plastic cover **30** such as shown in connection with FIGURE 8.

If should be understood that the balls **9** need not be metal bearing balls, but may be formed of plastic material, glass, or the like.

While the applicator has been referred to as a "cosmetic" applicator, it should be understood that it may also be used to apply medicaments in liquid or semi-liquid form, and that the substance dispensed may be generally applied without the need of touching the substance with one's fingers.

While particular embodiments of this invention have been shown and described, it is not intended to limit the same to the exact details of the constructions set forth, and it embraces such changes, modifications, and equivalents of the parts and their formation and arrangement as come within the purview of the appended claims.

What is claimed is:

1. A cosmetic applicator, comprising: a ring member having an annular raceway and adapted to border the mouth of a cosmetic container; a plurality of ball bearings in said raceway; a cover member, a ring element bordering said cover member and having a raceway confronting the raceway of said ring member, whereby said cover member rotates freely on said container, said cover member having an outer massaging surface and perforations.

2. A cosmetic applicator as set forth in claim 1, wherein: said ring member is provided with screw threads for attachment to a container having mating screw threads.

3. A cosmetic applicator as set forth in claim 1, wherein: said ring member is integral with said container.

4. A cosmetic applicator as set forth in claim 1, wherein: said cover member has annular undulations and is formed of yieldable plastic material.

5. A cosmetic applicator as set forth in claim 1, wherein: said cover member is provided with an outer layer formed of a porous elastomer constituting said massaging surface.

6. A cosmetic applicator, comprising: a ring member formed of plastic material adapted to border the mouth of a container and having an annular outwardly facing thrust bearing raceway; a plurality of ball bearings in said raceway; a perforated cover member fitted over said ring member to close said container, and having an annular thrust bearing raceway mating the raceway in said ring member; and means for interconnecting said ring and cover members to permit free rotation of said cover member, whereby on off-center contact of the cover with a skin surface said cover tends to rotate and massage the skin.

7. A cosmetic applicator as set forth in claim 6, wherein: a manifold member supports a plurality of said ring members and is connected to said container.

8. A cosmetic applicator as set forth in claim 6, wherein: the massaging surface of said cover is provided with a ribbed pattern to effect localized depression of the skin surface.

9. A cosmetic applicator as set forth in claim 6, wherein: said ring member is provided with a central ball socket element and perforated means joining said central ball socket to said ring member; said cover member is provided with a mating socket; and a pivot ball is fitted in said sockets.

10. A cosmetic applicator as set forth in claim 6, wherein: said ring member and container are joined by screw threads; said cover member is provided with an annular skirt within said ring member; and a seal disk is initially interposed between said skirt and the mouth of said container for engagement by said skirt to seal said container and immobilize said cover member.

11. A cosmetic applicator, comprising: a container; a cover member therefor having perforations therein and an outer massaging surface; an annular ball bearing structure having a raceway fixed to said container, a confronting raceway fixed to said cover, and ball bearings between said raceways to permit free rotation of said cover member, whereby, on off-center contact of the cover member with a skin surface, said cover member tends to rotate and massage the skin.

No references cited.