Aug. 1, 1967 O. H. CHASE ETAL 3,333,292

CONTAINER-INTEGRATED APPLICATOR

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FIG. 1.

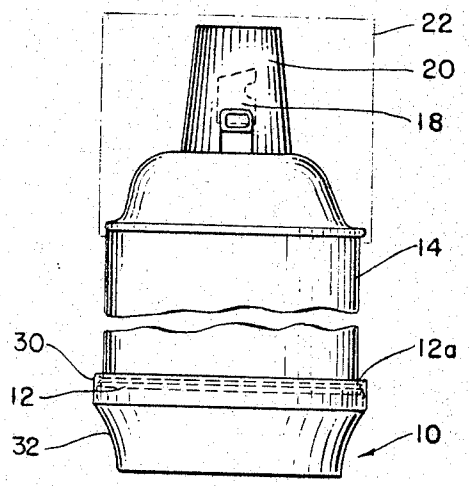


FIG. 2.

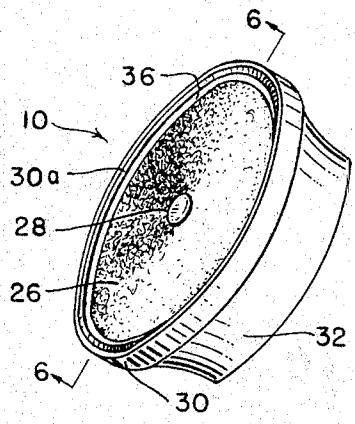


FIG. 3.

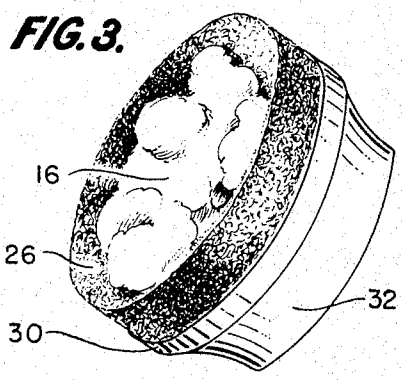


FIG. 4.

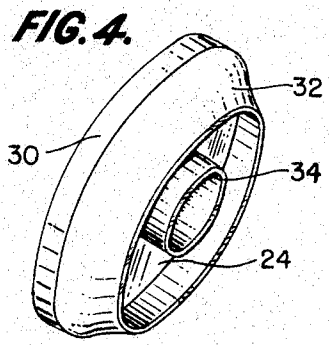


FIG. 5.

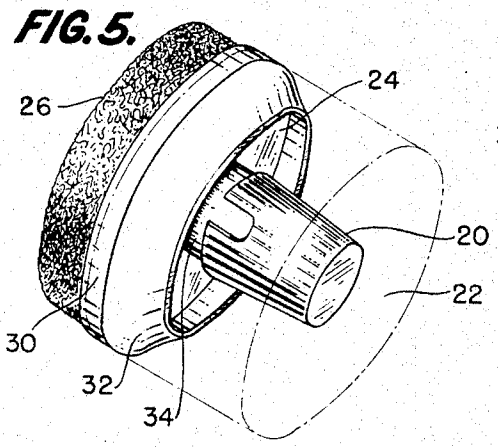
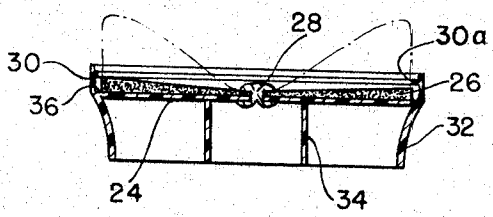


FIG. 6.



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FIG. 7.

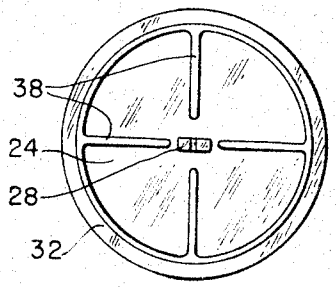


FIG. 8.

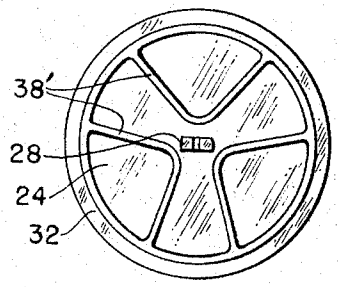


FIG. 9.

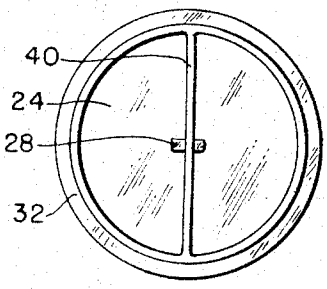
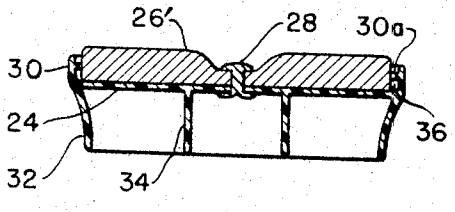


FIG. 10.



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CONTAINER-INTEGRATED APPLICATOR

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8 Claims. (Cl. 15—517)

This invention relates generally to the field of applicators for use with liquid, semi-liquid, solid and aerosol products, and has as its objective the creation of an applicator device adapted to form an integral part of the container for the product with which it is intended to be employed, when not in use, and easily and quickly detached therefrom for use.

More specifically, the invention relates to an applicator device directed to a construction which enables its principal functional element, namely the applicator pad, to be entirely contained between the base cavity or undersurface of conventional cans and can-type containers and the outer surface of the applicator device, when not in use. The invention, with further reference to its directed construction, embodies, in the preferred forms hereinafter shown and described, as well as in modifications thereof, novel elements of practical design and structural simplicity adapted to enhance its functional versatility and for implementation of the use of a wide variety of personal and household products of chemical or related composition.

Applicators, per se, of many materials and types, have long substituted for the fingers and hands in the use of practically every type of liquid, semi-liquid, solid and aerosol product, the applicators being usually of sponge, cloth or brush variety separately accessible from household supplies and not always best suited to the task, or the effects envisioned by the product manufacturer. Very few of such products are integrally or detachably package-equipped with a practical applicator device disposable at consumer option when the contained product is exhausted.

Although the prior art discloses a variety of detachable and fixed applicator devices of both manual and aerosol-integrated types, only a few of these have reached the market in their intended container-integrated form. This is particularly noticeable in the aforementioned aerosol product category wherein subsequent technological developments in pressure valve and emission mechanisms have contributed to container modifications non-accommodative of the applicator constructions previously created, and for which appropriate modification is either impossible or too costly. It is also noteworthy that the aforementioned applicator devices are structurally directed to specific use implementation as, for example, "Nozzle Applicator for Shaving Lather"; "Brush Head for Dispensing and Applying Foam Detergent"; "Aerosol Upholstery Shampooer," to name but a few. In each instance the applicator structure is limited to the single application purpose to which it is directed, and is not adapted for other purposes or products. Further, the original concept of these applicators, as well as their structural and mechanical features, are directed in each instance to a specific type of prime container design, and the rapid modifications of prime container design to conform to technological advances preclude their feasible adaptations to such modifications and predispose their early obsolescence.

It is therefore the principal object of our invention to create a container-integrated applicator device adapted to form an integral part of the container when not in use, by being attached to the container base with the applicator pad concealed thereinbetween.

A second important object of our invention lies in the provision of an applicator of the type described which is provided with integral gripping means for manual use.

A third important object of our invention lies in the provision of an applicator of the type described wherein the applicator pad forms a concave application surface.

A fourth important object of our invention lies in the provision of an applicator of the type described which is adapted for use with a large variety of liquid, semi-liquid, solid and aerosol products.

Still another important object of our invention lies in the creation of an applicator which is inexpensive to manufacture and which can be compactly packed with the prime container as a single package.

These and other salient objects, advantages and functional features of our invention, together with the novel features of construction, composition and arrangement of parts, will be more readily apparent from an examination of the following description, taken with the accompanying drawings, wherein:

FIG. 1 is a side view of a preferred embodiment of our invention, shown secured to the base of an aerosol container for shaving cream, the central portion of the container being broken away for purposes of convenience;

FIG. 2 is a side elevational view of the applicator device of FIG. 1;

FIG. 3 is a view similar to FIG. 2, but showing the expanded applicator pad with shaving cream disposed thereon;

FIG. 4 is a rear elevational view of the embodiment of FIG. 2;

FIG. 5 is a side view similar to FIG. 4, but showing the applicator pad expanded and the attachment of one form of container cap to the applicator device, and a second form of container cap in broken lines;

FIG. 6 is a cross-sectional view taken on lines 6—6 of FIG. 2, showing expansion of the applicator pad by broken lines;

FIGS. 7, 8 and 9 are rear views of modified forms of the applicator device; and

FIG. 10 is a cross-sectional view, similar to FIG. 6, but showing a modified form of applicator pad.

Similar reference characters designate similar parts throughout the different views.

Illustrative of the embodiment shown by FIGS. 1–6, our applicator device **10** is shown, in FIG. 1, secured to the base **12** of an aerosol container **14** containing shaving cream **16**. The top of the container **14** is provided with the usual form of pressure valve or ejector mechanism **18** for the emission of the shaving cream **16**, surmounted by a closure cap **20**, as is well known in the art. A second form of closure cap **22** is indicated thereon by the broken lines, for the purposes to be hereinafter described, since many such aerosol containers **14** presently come equipped with either one form or the other of the closure caps **20** and **22**. The base **12** is locked to the side wall of the container **14** by means of a peripheral flange **12***a* projecting from the base **12** and enveloping the edge of the container wall.

The applicator device **10** comprises a base plate **24**; to the front surface of which an applicator pad **26** is centrally secured by means of a rivet **28** passing through the pad **26** and the base plate **24** as shown by FIG. 6; a peripheral wall **30** extending forwardly of the base plate **24** and being of a diameter equal to but not substantially greater than the diameter of the flange **12***a*, having its inner wall, adjacent the edge thereof, provided with an annular bead **30***a*, adapted to over-ride the flange **12***a* when the applicator device **10** is engaged to the container **14** to lock them together, as shown in FIG. 1; and a contoured flange **32** extending from the rear surface of the base plate **24**. The rear surface of the base plate **24** is further provided centrally with a hollow cylindrical knob **34** functioning as a manual means to grasp the applicator device **10** to remove it

from the container 14 and to manipulate the device 10 in its use with the product involved, as will be hereinafter described. Both the flange 32 and the knob 34 are of equal height and terminate on the same plane so as to form a level platform for the container 14 when the applicator device 10 is secured thereto.

The base plate 24, wall 30, flange 32, and knob 34 of the applicator device 10 are preferably formed of a single piece of plastic material, molded as is well known in the art, although other suitable material may be substituted therefor. The applicator pad 26, in the embodiment shown, is composed of compressed and expandable cellulose sponge material, although any other kind of resilient, compressible and expandable material of like nature may be substituted therefor. As shown by FIGS. 2 and 6, the pad 26 is of a diameter smaller than the internal diameter of the wall 30, so as to define thereinbetween a circular channel 36 in which the flange 12*a* of the container 14 is disposed in the engagement of the device 10 thereto, as shown in FIG. 1. In its compressed, or natural, state the pad 26, as shown in FIGS. 2 and 6, is recessed below the upper edge of the wall 30, so that it fits conveniently within the confines of the wall 30 and between the bottom surface of the container base 12 and the upper surface of the base plate 24 when the device 10 is secured to the container 14, as shown in FIG. 1. When properly wetted, however, the pad 26 expands to the size and shape shown by FIGS. 3 and 5, forming a concave surface, as shown by the broken lines of FIG. 6, the advantages of which will be hereinafter disclosed. While either the knob 34 or the contoured flange 32 can be used as the gripping means by which the applicator 10 is removed from the container 14 and held for use, they also provide foundations, if so desired, for the attachment of either type of container closure cap 20 or 22, as shown by FIG. 5, to provide for enlarged grasping means, the knob 34 having an outer diameter to frictionally engage the cap 20, and the flange 32, adjacent the wall 30, to frictionally engage the cap 22.

In the use and operation of the embodiment described, the applicator device 10 is removed from the base of the container 14 by pulling on either the knob 34 or the flange 32, and the pad 26 is then wetted, whereupon it expands to the size and contour shown in FIG. 3 and the broken lines of FIG. 6. Shaving cream 16 is then directed, in the usual manner, from the aerosol container nozzle 18 onto the pad 26, as shown by FIG. 3. The user then applies the cream 16 to his wetted face, the surface contour of the pad 26 tending to centrally contain the cream 16 and also providing a form of suction cup serving to lift the hairs of the beard from the face so that the cream 16 can get between the hairs and thus accelerate the hair-softening process. After shaving is completed the applicator pad 26 is rinsed clean of all cream and compressed by pressing it against a flat or convex surface, thereby returning the pad 26 to its normally compressed state so that the device 10 can be reattached to the base of the container 14 for future use.

In FIGS. 7, 8 and 9 there are shown modified forms of gripping means for the applicator device 10 in place of the knob 34. In FIGS. 7 and 8 the gripping means takes the form of radial ribs 38 and 38′ extending on the rear of the base plate 24 centrally toward the flange 32, all constructed, as in the first embodiment, from a single mold. In the same manner, as shown by FIG. 9, a central rib 40 may be employed for such purpose.

In the foregoing embodiments, our applicator device 10 has been shown as applied to a standard form of circular aerosol container 14. It can as well be applied to containers of oval, square or other shapes or designs by modifying the shape of the base plate 24 and peripheral wall 30 to match the base shape of the container to which the device 10 is to be attached. Modification of the shape of the pad 26 may or may not be required.

While our invention has thus far been directed to aerosol containers for shaving cream, it is not intended to be limited to such application alone, but, rather, to be used as well with numerous other personal and household products in packaged form, such as polishes, detergents, creams, waxes, and the like, and whether in liquid, semi-liquid, solid or aerosol form. In such use, as shown by FIG. 10, a modified form of applicator pad is used, the pad 26′, for example, being made of cloth, or wool, to be used with a polishing cream or liquid, felt or similar material to apply floor waxes, etc. In such case the pad 26′ is normally of a height or thickness to extend beyond the edge of the wall 30, so as to present at all times of use a soft over-all surface for spreading, rubbing-in or wiping off the product, the natural compressibility of the pad material 26′ permitting it to be depressed below the edge of the wall 30 sufficiently in order to reattach the device 10 to the base of the respective container.

An additional utilization of the applicator device 10 may be found in connection with its use with, for example, a floor wax. In such a case, after the wax has been applied to the pad 26′ there may be attached, through the opening in the knob 34, the end of a rod or stick, such as is used with floor mops, and the device 10 may be used to wax a floor by means of such rod or stick, as is well known in the art.

The embodiments thus shown and described, therefore, are by way of illustration and not of limitation, and various changes may be made in the construction, composition and arrangement of parts without limitation upon or departure from the spirit and scope of the invention, or sacrificing any of the advantages thereof inherent therein, and which fall within the scope of the appended claims.

Having described our invention, we claim:

1. In combination with a container of the type described, an applicator device detachably secured to the closed end of the container to form a platform therefor comprising a base plate, a peripheral wall extending from the top surface of the base plate to detachably engage the container, a resilient applicator pad disposed within the peripheral wall below the edge thereof in a compressed state and expandable above the said edge, rivet means centrally securing the applicator pad to the top surface of the base plate to form a concave surface for the pad in expanded state, and means disposed on the bottom surface of the base plate for grasping and manipulating the applicator device, said last means forming a level platform to support the container and comprising in combination a peripheral flange extending from the bottom surface of the base plate and a knob extending centrally from said bottom surface of the base plate, the flange and knob terminating on the same plane.

2. An applicator device as described in claim 1, the means to secure the device to the container comprising an annular bead around the inner surface of the peripheral wall adjacent its edge.

3. An applicator device as described in claim 1, the applicator pad being made of a cellulose sponge material.

4. An applicator device as described in claim 1, the applicator pad being made of a resilient fibrous material.

5. An applicator device as described in claim 1, the peripheral flange and the circular knob adapted to be selectively engaged by the closure cap of the container to form an extended grasping and manipulating means.

6. An applicator device as described in claim 1, the circular knob being hollow and open to receive the end of an extension rod.

7. In combination with a container of the type described, an applicator device detachably secured to the closed end of the container to form a platform therefor comprising a base plate, a peripheral wall extending from the top surface of the base plate to detachably engage the container, a resilient applicator pad disposed within the

peripheral wall below the edge thereof in a compressed state and expandable above the said edge, rivet means centrally securing the applicator pad to the top surface of the base plate to form a concave surface for the pad in expanded state, and means disposed on the bottom surface of the base plate for grasping and manipulating the applicator device, said last means forming a level platform to support the container and comprising in combination a peripheral flange extending from the bottom surface of the base plate and a plurality of ribs radiating from the center of the said bottom surface to the peripheral flange, and integral therewith.

8. In combination with a container of the type described, an applicator device detachably secured to the closed end of the container to form a platform therefor comprising a base plate, a peripheral wall extending from the top surface of the base plate to detachably engage the container, a resilient applicator pad disposed within the peripheral wall below the edge thereof in a compressed state and expandable above the said edge, rivet means centrally securing the applicator pad to the top surface of the base plate to form a concave surface for the pad in expanded state, and means disposed on the bottom surface of the base plate for grasping and manipulating the applicator device, said last means forming a level platform to support the container and comprising a peripheral flange extending from the bottom surface of the base plate and a diametric rib transverse said bottom surface and integral with the peripheral flange at the ends thereof.

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