(51) International Patent Classification:
A46B 17/08 (2006.01)  B43K 5/18 (2006.01)
A46B 11/04 (2006.01)  B43K 1/06 (2006.01)
B43K 5/00 (2006.01)  A47L 13/22 (2006.01)
B43K 23/12 (2006.01)  B65D 47/00 (2006.01)

(21) International Application Number:
PCT/US2006/005549

(22) International Filing Date:
17 February 2006 (17.02.2006)

(24) International Bureau:
World Intellectual Property Organization
International Bureau

(25) Filing Language:
English

(26) Publication Language:
English

(30) Priority Data:
11/081,046 28 March 2005 (28.03.2005) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available):

(84) Designated States (unless otherwise indicated, for every kind of regional protection available):
ARIPO (BW, GH, GM, KE, LS, MW,MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

(54) Title: FLOW-THROUGH COSMETIC APPLICATOR PACKAGE

(57) Abstract: The present invention is a flow-thru cosmetic dispenser and applicator that comprises a means for controlling the flow of product from a reservoir to an applicator tip. The flow control means comprises wedge structures attached to biased hinges. The wedge structures move on the hinges in response to the removal or placement of a closure. The movement of the wedges alternately opens and pinches-off a deformable conduit in which the product flows. The invention includes means for converting any ordinary cosmetic container into a flow-thru container.

Declaration under Rule 4.17:
— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:
— with international search report
— with amended claims and statement

(88) Date of publication of the international search report: 27 December 2007
Date of publication of the amended claims and statement: 6 March 2008
What is claimed is:

1. A flow-thru cosmetic dispenser for a flowable product comprising:
   a container having a reservoir that is capable of dispensing a flowable product through a container orifice;
   an applicator tip having a base and an external surface;
   a deformable, resilient conduit that defines a lumen which, in an undeformed state, is capable of conducting product between the reservoir and the applicator tip, but which in a deformed state is hindered from conducting product;
   the deformable conduit having proximal and a distal ends which define proximal and distal orifices of the lumen; and
   a closure having:
       an opened position, wherein the closure is not covering the applicator tip and the resilient conduit is in the undeformed state; and
   a closed position, wherein the closure is covering the applicator tip and the resilient conduit is pressured into the deformed state by the closure.

2. The flow-thru cosmetic dispenser according to claim 1 wherein a portion of the deformable conduit contacts the container, forming a fluid tight seal, therebetween.

3. The flow-thru cosmetic dispenser according to claim 2 wherein the container further comprises a neck finish and the deformable conduit comprises flange that lies flat on top of the neck finish to form the fluid tight seal.

4. The flow-thru cosmetic dispenser according to claim 1 wherein at least a defined portion of the deformable conduit comprises one or more deformable, resilient materials that assume a deformed state when the closure is moved into the closed position and that substantially return to an undeformed state when the closure is moved into the opened position.

5. The flow-thru cosmetic dispenser according to claim 4 wherein the defined portion is made of natural or synthetic rubber.
6. The flow-thru cosmetic dispenser according to claim 5 wherein the synthetic rubber is a silicone elastomer.

7. The flow-thru cosmetic dispenser according to claim 6 wherein the synthetic rubber is a non-silicone elastomer chosen from the group consisting of styrene-butadiene, polybutadiene, polyisoprene, nitrile elastomers, butyl, neoprene, ethylene-propylene rubbers and urethane elastomers.

8. The flow-thru cosmetic dispenser according to claim 4 wherein the defined portion is capable of assuming a deformed state that hinders the flow of product into the applicator tip.

9. The flow-thru cosmetic dispenser according to claim 8 wherein the defined portion is capable of assuming a deformed state that cuts off the flow of product altogether.

10. The flow-thru cosmetic dispenser according to claim 1 wherein the applicator tip may comprise a bristled brush, a comb, a sponge, a powder puff, a flocked substrate or a doe-foot.

11. The flow-thru cosmetic dispenser according to claim 10 wherein the applicator tip comprises a brush.

12. The flow-thru cosmetic dispenser according to claim 1 wherein the base of the applicator tip is held securely in flow communication with the distal orifice of the lumen.

13. The flow-thru cosmetic dispenser according to claim 12 wherein the base of the applicator tip is glued, in-molded, welded, crimped, snap-fitted or screw-fitted, directly or indirectly to the distal end of the deformable conduit.

14. The flow-thru cosmetic dispenser according to claim 13 wherein the base of the applicator tip is secured in flow communication with the distal orifice of the lumen by
means of a ferrule, one end of which is crimped to the base of the applicator tip and the other end is inserted into the distal orifice of the lumen.

15. The flow-thru cosmetic dispenser according to claim 1 further comprising a flow tube, a proximal end of which is in flow communication with the lumen and a distal end of which is located in an interior region of the applicator tip.

16. The flow-thru cosmetic dispenser according to claim 15 wherein the distal end of the flow tube is self-closing.

17. The flow-thru cosmetic dispenser according to claim 4 further comprising one or more wedges capable of occupying a position such that the wedges are not in deforming contact with the defined portion, and a position such that the wedges deform the defined portion to substantially stop the flow of product through the lumen.

18. The flow-thru cosmetic dispenser according to claim 17 further comprising one or more biased hinges, one associated with each wedge.

19. The flow-thru cosmetic dispenser according to claim 18 comprising two biased hinges and two associated wedges.

20. The flow-thru cosmetic dispenser according to claim 18 wherein the one or more hinges are located in a wall of a housing that surrounds at least a portion of the deformable conduit.

21. The flow-thru cosmetic dispenser according to claim 20 wherein the housing is comprised of more than one sub-housings that fit together.

22. The flow-thru cosmetic dispenser according to claim 21 wherein the sub-housings are fit together by friction fit, snap fit, welding or mechanical band.
23. The flow-thru cosmetic dispenser according to claim 20 wherein the container further comprises a neck finish, the deformable conduit further comprises a flange and the housing is secured to the neck finish such that the flange forms an effective seal against the neck finish.

24. The flow-thru cosmetic dispenser according to claim 23 wherein the housing is secured to the neck finish by means of cooperating screw threads.

25. The flow-thru cosmetic dispenser according to claim 20 wherein the closure is capable of being secured to the housing.

26. The flow-thru cosmetic dispenser according to claim 25 wherein the one or more wedges occupy the first position when the closure is not on the housing and occupy the second position when the closure is fully seated on the housing.

27. A method for converting a cosmetic dispensing container into a flow-thru applicator package, the method comprising the steps of:

   providing a container having a neck finish;

   fitting the container neck finish with a housing that houses a deformable conduit, the deformable conduit being connected to an applicator tip that has a base that is held securely in flow communication with the deformable conduit;

   providing a means of deforming the deformable conduit;

   providing a closure that activates the conduit-deforming means when the closure is seated on the package.
1. Claims 1-26 are not anticipated by Callaghan, Suddarth or Duggal, which fail to teach or suggest a closure having an opened position, wherein the closure is not covering the applicator tip and the resilient conduit is in the undeformed state; and a closed position, wherein the closure is covering the applicator tip and the resilient conduit is pressured into the deformed state by the closure.

In Callaghan and Suddarth, there is no suggestion of any type of closure, let alone the multifunctional closure of amended claim 1.

In Duggal, no feature meets all of the requirements of the closure as recited in claim 1. Regarding claim 25, the Examiner wrote: “In regard to claim 25, a closure 50 capable of covering the tip” is secured on the housing.” When the Examiner writes reference numeral “50”, it is unclear if the Examiner is referring to the applicant's closure, which is number 50, or if the Examiner is referring to element 50 of Duggal (which is the “adjustment knob”, located on the interior, not a closure). Absent any feature that meets all the requirements of claim 1, claims 1-26 are not anticipated by Duggal.

The Examiner asserts that the method of claim 27 is inherent in operating the Duggal device.

Claim 27 recites: “providing a closure that activates the conduit-deforming means when the closure is seated on the package”. This is not inherent in Duggal. In Duggal, the adjustment knob activates the conduit-deforming means, which, again, is not a closure. A closure would have no way of activating the adjustment knob, which is wholly inside of the container.

2. Claims 6, 7, 11, 21, 22 and 25 are non-obvious over Callaghan, at least because:

- nothing in Callaghan suggests modifying Callaghan to have a closure as recited in claim 1
- modifying Callaghan by providing a closure of the type recited in claim 1, renders Callaghan inoperative.
The lever of Callaghan applies and releases pressure on the valve tube. The natural state of the lever is to apply pressure on the valve tube, thus deforming the valve tube. Therefore, even without a closure, the valve tube is NOT in the undeformed state, as required by claim 1.

Furthermore, if a closure is allowed to engage the lever, then the valve tube will open, allowing product to flow through the valve tube. Therefore, with a closure covering the applicator tip, the valve tube is NOT in the deformed state, as required by claim 1.

Furthermore, at no time is the valve tube pressured into the deformed state by a closure, as required by claim 1.

Furthermore, when not in use, product flow is shut off by the spring biased lever. Callaghan has no motivation to provide a closure that shuts off product flow, because it would be unnecessary duplication. Also, if a closure is provided in the manner suggested by the Examiner, the Callaghan device will fail to operate properly, because product would flow with the closure in the closed position.