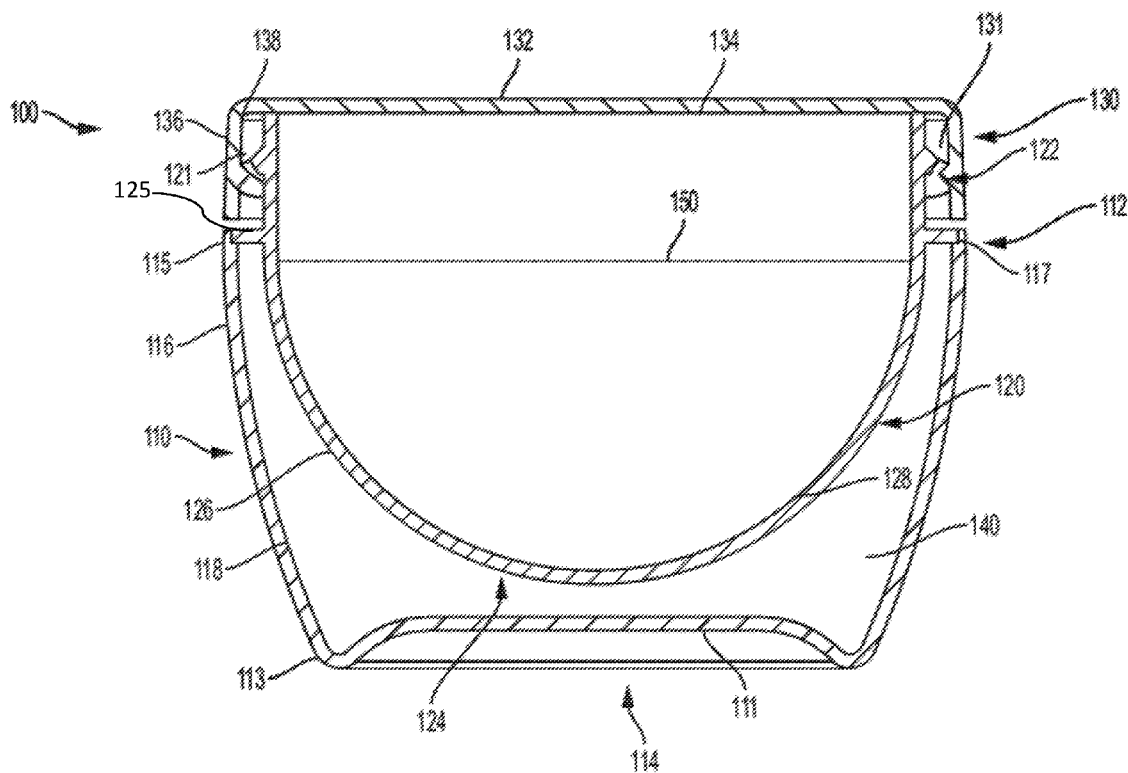


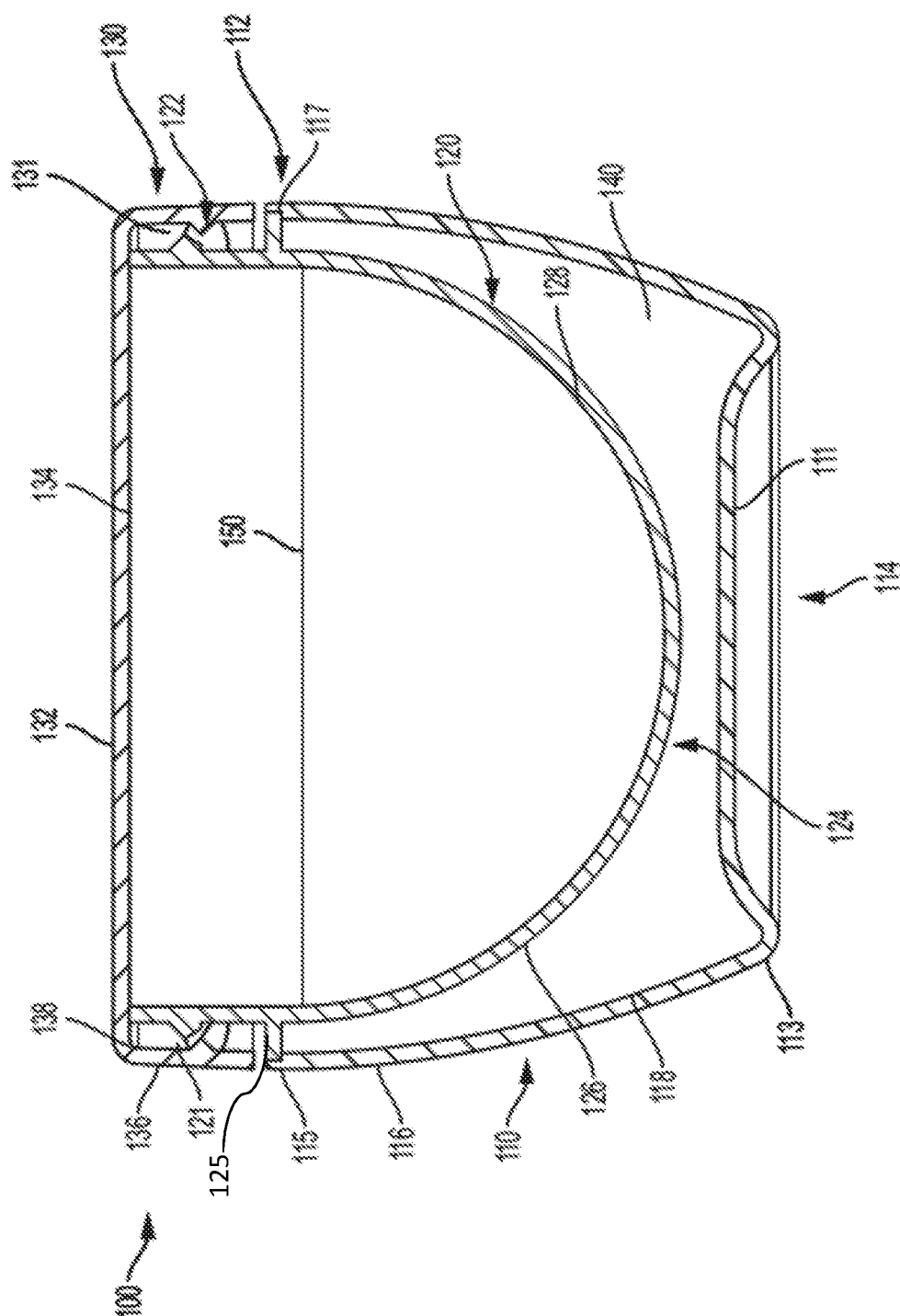


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Young(10) **Pub. No.: US 2018/0235347 A1**(43) **Pub. Date: Aug. 23, 2018**(54) **COSMETIC CONTAINER****Publication Classification**(71) Applicant: **Tessy Plastics Corporation**, Elbridge,
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(2013.01); **A45D 2040/0012** (2013.01)(73) Assignee: **Tessy Plastics Corporation**, Elbridge,
NY (US)(57) **ABSTRACT**(21) Appl. No.: **15/898,398**(22) Filed: **Feb. 16, 2018****Related U.S. Application Data**(60) Provisional application No. 62/459,760, filed on Feb.
16, 2017.

A cosmetic container comprises an outer shell comprising a concave inner surface that defines an inner space. An inner shell comprises a top and a bottom, where the bottom is at least partially located within the inner space of the outer shell. One or more engagement features are positioned proximate the top of the inner shell. A liquid-tight chamber is defined between the outer shell and the inner shell and contains a material with a refractive index greater than 1.0.







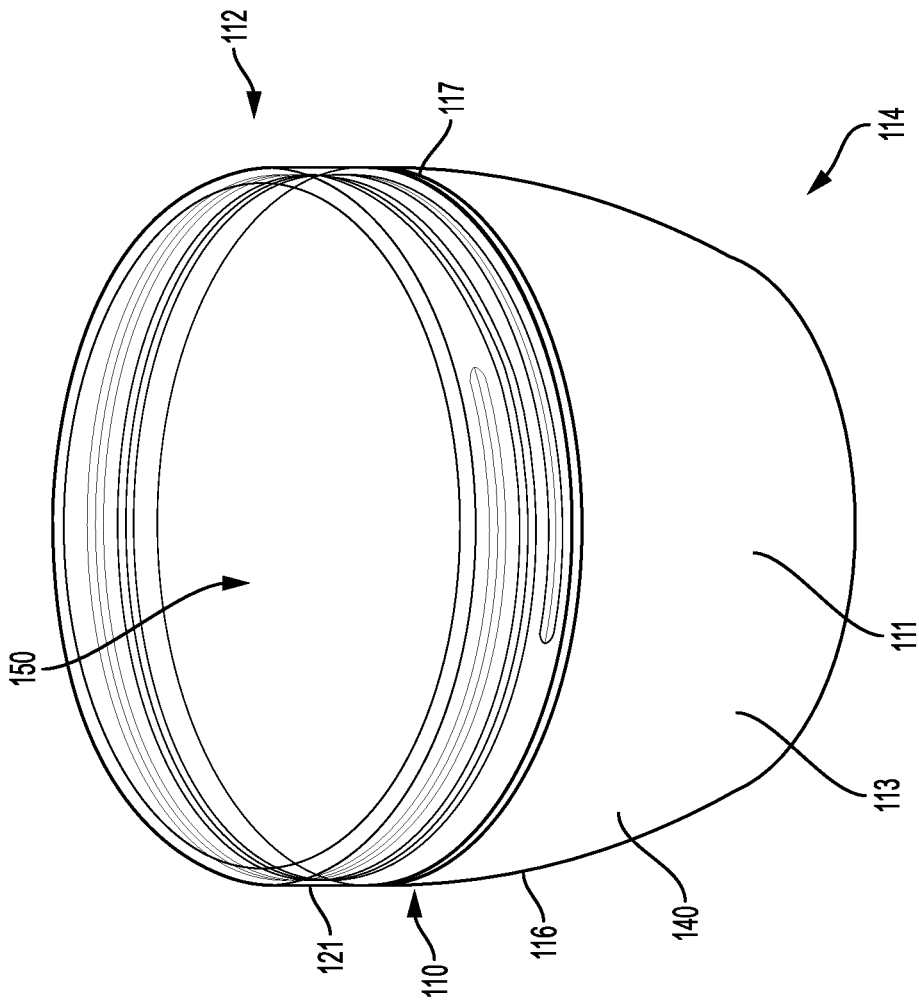


FIG. 2

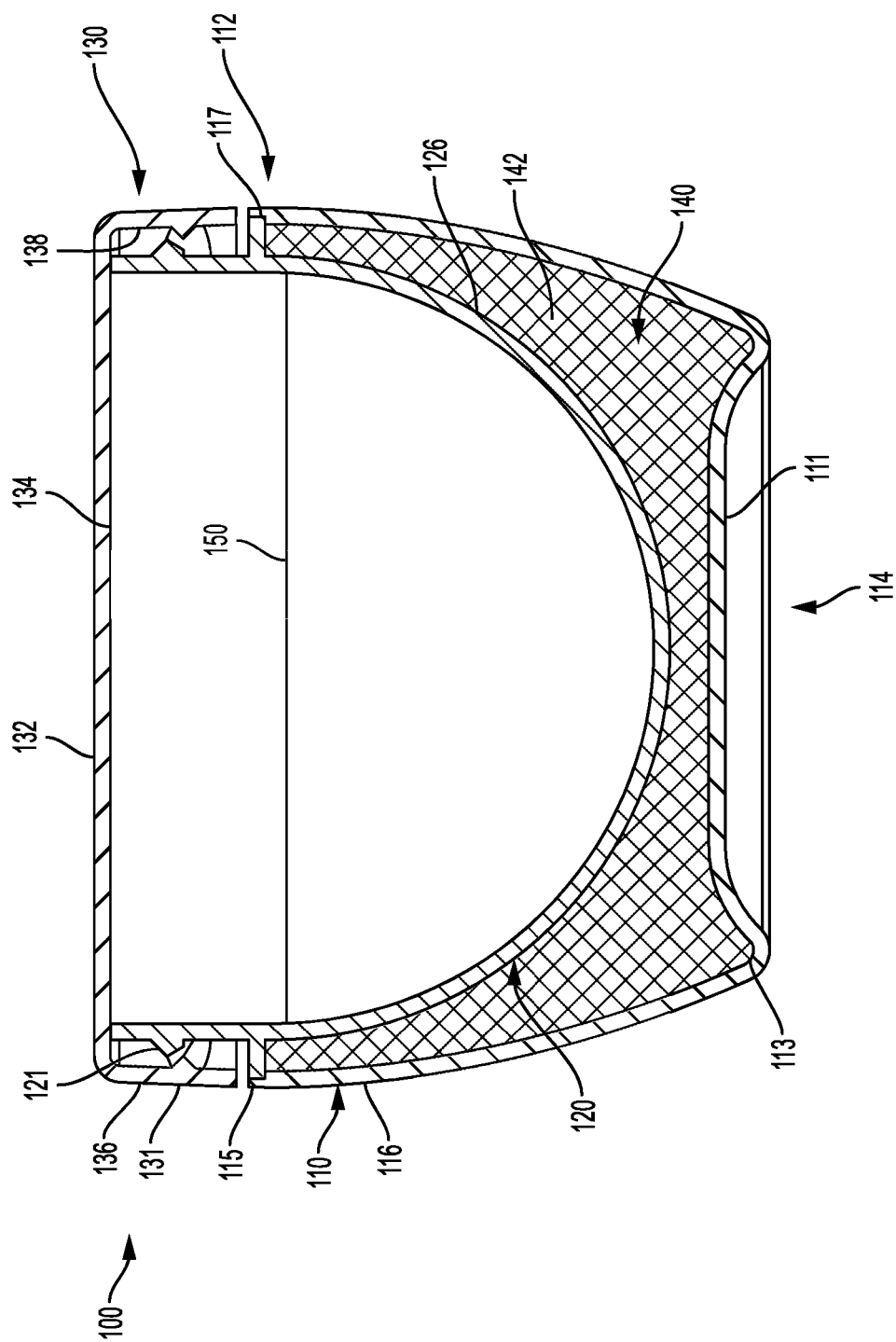


FIG. 3

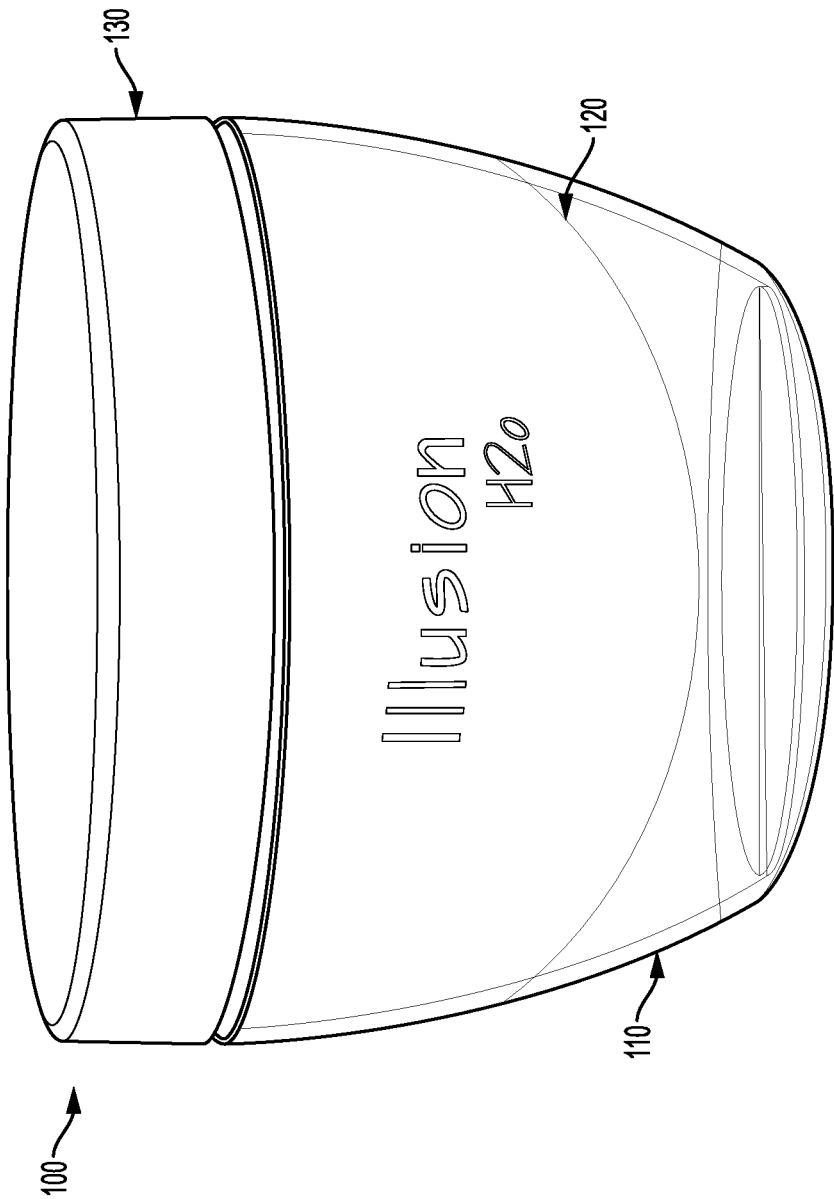


FIG. 4

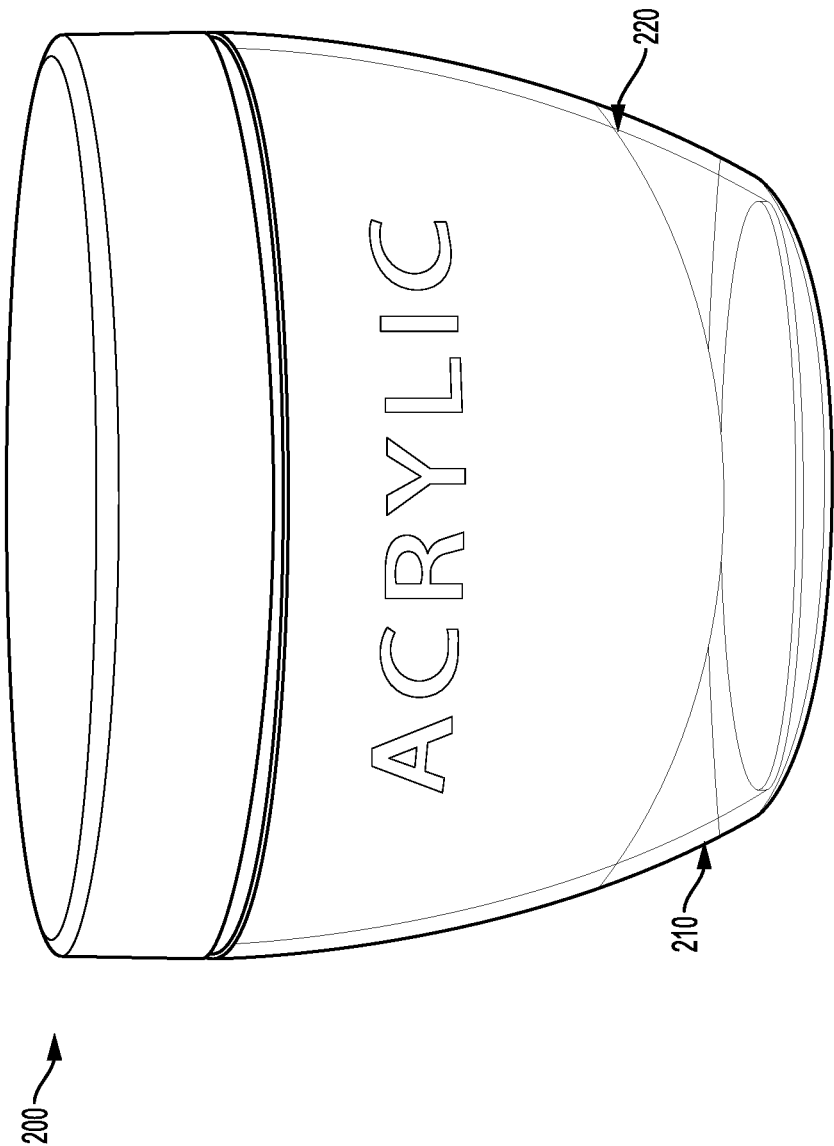


FIG. 5
PRIOR ART

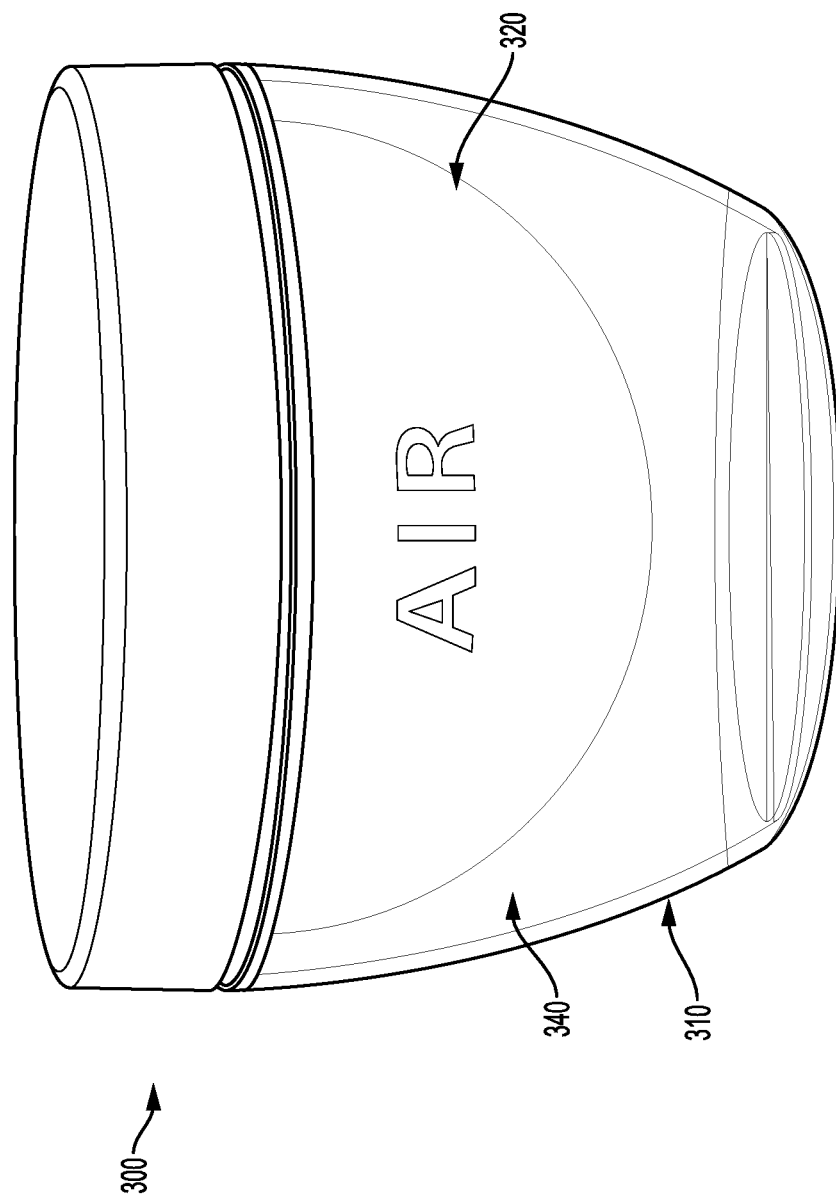


FIG. 6

COSMETIC CONTAINER

CROSS REFERENCE TO RELATED APPLICATION

[0001] This patent application is a non-provisional of, and claims the priority and benefit of, U.S. Provisional Patent Application No. 62/459,760, filed on Feb. 16, 2017. The entire contents of such application are hereby incorporated by reference.

TECHNICAL FIELD

[0002] This application is directed generally to the field of containers or vessels for holding cosmetics and more specifically to a two-layer or nested cosmetic container having an outer shell and an inner shell which define a liquid-tight cavity between them that contains a renewable and biodegradable composition.

BACKGROUND

[0003] The cosmetic industry is a multi-billion dollar industry which sells a wide range of cosmetic products. Certain cosmetic products, such as high-end wrinkle and face creams, are packaged differently in order to enhance the user's experience and impart a sense of quality and luxury to the overall product. For many years, two-layered jars or containers have been used in the packaging of such high-end cosmetics. Typically, these two-layered jars incorporate a transparent outer shape or shell with one diameter and a separate translucent or opaque inner shell or shape, which includes a cavity to hold the cosmetic product. The diameter of this cavity is smaller than the outer diameter such that the inner shell is nested within the outer shell. Sometimes, the inner shell or cavity is a different shape than the outer shell or shape in order to enhance the overall aesthetic appearance of the jar.

[0004] The formation of these two-layered containers usually includes two shells made of glass or ceramic with a thick layer of resin, such as Surlyn®, sandwiched between each shell. Other containers have a solid resin layer surrounding the inner shell. The resin is used to increase the weight of the jar to make it a more substantial product as well as for creating an optical distortion of the inner shell when viewed through the outer shell or solid resin layer. When the outer shell or solid resin layer is transparent, the relatively high refractive index of the resin distorts the shape of the inner shell creating a unique aesthetic appearance and making the inner shell appear to be suspended within the outer shell. However, these resins are expensive and result in high manufacturing costs. Moreover, the large amount of resin and other material comprising these containers increases the amount of waste when the containers are discarded, which increases its overall environmental impact.

[0005] The foregoing background describes some, but not necessarily all, of the problems, disadvantages and shortcomings related to current cosmetic containers. There is a general and pervasive need in the field to provide a cosmetic container that is aesthetically pleasing, less expensive to manufacture, and causes a lesser impact to the environment.

SUMMARY

[0006] In an embodiment, a cosmetic container comprises an outer shell comprising an inner surface that defines an inner space. An inner shell comprises a top and a bottom.

The bottom of the inner shell is at least partially located within the inner space of the outer shell. One or more engagement features are positioned proximate the top of the inner shell. A liquid-tight chamber is defined between the outer shell and the inner shell and contains a material or composition with a refractive index greater than 1.0.

[0007] In another embodiment, the container comprises an outer shell comprising a top and a bottom. The outer shell comprises an inner surface which defines an interior space. An inner shell comprising a top and a bottom is coupled to the outer shell. The inner shell is at least partially located within the interior space of the outer shell. A liquid-tight chamber is defined between the outer shell and the inner shell and contains a material with a refractive index greater than 1.0.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] So that the manner in which the features of the invention can be understood, a detailed description of the invention may be had by reference to certain embodiments, some of which are illustrated in the accompanying drawings. It is to be noted, however, that the drawings illustrate only certain embodiments of this invention and are therefore not to be considered limiting of its scope, for the scope of the invention encompasses other equally effective embodiments. The drawings are not necessarily to scale, emphasis generally being placed upon illustrating the features of certain embodiments of the invention. In the drawings, like numerals are used to indicate like parts throughout the various views. Thus, for further understanding of the invention, reference can be made to the following detailed description, read in connection with the drawings in which:

[0009] FIG. 1 is a cross section view of an embodiment of a two-layer cosmetic container;

[0010] FIG. 2 is a front isometric view of the embodiment of the cosmetic container of FIG. 1 with the lid removed;

[0011] FIG. 3 is a cross section view of the embodiment of the cosmetic container of FIG. 1 with a filled chamber;

[0012] FIG. 4 is a front isometric view of an embodiment of a cosmetic container according to the disclosure with a chamber filled with salt solution;

[0013] FIG. 5 is a front isometric view of a prior art cosmetic container with a with a solid resin layer; and

[0014] FIG. 6 is a front isometric view of a cosmetic container with an air pocket between the layers;

DETAILED DESCRIPTION

[0015] The following discussion relates to various embodiments of a cosmetic container or jar. It will be understood that the herein described versions are examples that embody certain inventive concepts as detailed herein. To that end, other variations and modifications will be readily apparent to those of sufficient skill. In addition, certain terms are used throughout this discussion in order to provide a suitable frame of reference with regard to the accompanying drawings. These terms such as "forward", "rearward", "interior", "exterior", "front", "back", "top", "bottom", "inner", "outer", and the like are not intended to limit these concepts, except where so specifically indicated. The terms "about" or "approximately" as used herein is meant to include the disclosed value as well as a range of values from 80-120% of the disclosed value. With regard to

the drawings, their purpose is to depict salient features of the cosmetic container and are not specifically provided to scale.

[0016] First and as illustrated in the embodiments of FIGS. 1, and 3-4, a cosmetic container or jar 100 generally includes an outer shell 110, an inner shell 120, and a lid 130. A chamber or cavity 140 is formed between the outer shell 110 and the inner shell 120.

[0017] Referring to FIGS. 1-3, the outer shell 110 has a top 112, a bottom surface 114, an outer surface 116, and an inner surface 118. As shown, the outer surface 116 and inner surface 118 are concave and substantially parallel to each other or conform to the shape of each other. However in other embodiments, the outer and inner surfaces 116, 118 may not be substantially parallel to each other or may not conform in shape to each other. The inner surface 118 defines an interior space. The top 112 of the outer shell 110 may comprise a notch 117 or shoulder positioned on the inner surface 118 of the outer shell 110. As shown, the bottom surface 114 of the outer shell 110 comprises an indentation or depression 111 positioned substantially at the center of the bottom surface 114 and extends into the interior space of the outer shell 110. The shape and size of the indentation 111 may vary in different embodiments. As shown in FIG. 1, one or more troughs 113 may be positioned proximate the indentation 111. The outer shell 110 is formed from a suitable rigid and impact resistant material that is transparent, such as glass or a plastic like polyethylene terephthalate (PET).

[0018] Still referring to FIGS. 1-3, an inner shell 120 is at least partially nested or positioned within the interior space of the outer shell 110. The inner shell has a top 122 and a bottom 124. As shown, the top 122 of the inner shell 120 extends above the top 112 of the outer shell 110. The inner shell 120 has an interior surface 128 that defines a cavity 150 configured to keep or store a cosmetic product. As shown in FIGS. 1-3, the exterior surface 126 of the inner shell 120 conforms to the shape of the interior surface 128, however in other embodiments, the exterior surface 126 of the inner shell 120 may not conform to the shape of the interior surface 128.

[0019] Still referring to the embodiments of the cosmetic container illustrated in FIGS. 1-3, the inner shell 120 may comprise one or more engagement features 121 positioned proximate the top 122. As shown in the assembled position illustrated in FIGS. 1 and 3, the inner shell 120 and the outer shell 110 are coupled together to produce a liquid tight seal. The notch 117 engages an extension 125 (FIG. 1) or wing that extends from the exterior surface 126 of the inner shell 120. The manner and method of producing the liquid tight seal may vary according to different embodiments. Once coupled together, the exterior surface 126 of the inner shell 120 and the inner surface 118 of the outer shell 110 define a liquid-tight chamber 140. As shown, the liquid-tight chamber 140 is also air-tight. The inner shell 120 is formed from a suitable rigid and impact resistant material such as glass or a plastic like PET. In an embodiment, the inner shell 120 may be transparent or opaque.

[0020] Referring to FIGS. 1 and 3, a lid 130 has a top surface 132 and a bottom surface 134. The bottom surface 134 may have one or more resilient sealing elements configured to contact the top 122 of the inner shell 120 when the lid 130 is installed or in a closed position. As shown in FIGS. 1-3, the lid 130 has an outer annular surface 136 and an inner annular surface 138. One or more complimentary engage-

ment features 131 are formed on the inner annular surface 138 and are configured to couple to the one or more engagement features 121 of the inner shell 120 to form a liquid-tight seal between the lid 130 and the inner shell 120. Once coupled together, the bottom surface 134 of the lid 130 acts to seal and bound the cavity 150 defined by the interior surface 128 of the inner shell 120. The outer annular surface 136 may include one more surface features configured to assist a user in opening and closing the lid 130.

[0021] Referring to FIG. 5, an example of a prior art cosmetic container 200 uses multiple layers of resin, typically an acrylic resin, or any other clear resin, to surround the inner shell 220 and create a transparent solid resin layer 210. This transparent solid resin layer 210 has a refractive index of about 1.5 or more, which results in a distorted image of the inner shell 220 when viewing through the transparent solid resin layer 210. In addition to the optical distortion, the multiple layers of resin or solid resin layer adds weight or heft to the cosmetic container 200 to impart a sense of quality and luxury to the overall product. However, these resins are expensive to produce which leads to increased manufacturing costs. In addition, these cosmetic containers 200 create a lot of waste when they are discarded due to the large amount of non-biodegradable resin used to manufacture the cosmetic container 200.

[0022] In contrast, FIG. 6 illustrates an example of a cosmetic container 300 using air to fill a chamber 340 present between a transparent outer shell 310 and an inner shell 320. Due to the relatively low refractive index of air (about 1.0), very little distortion is seen when viewing the inner shell 320 through the transparent outer shell 310. The use of air also does not impart the desired heaviness or weight to the cosmetic container 300 that the transparent solid resin layer 210 does. However, unlike the resin, air is inexpensive to produce and has essentially no environmental impact. Therefore, the cosmetic container 300 illustrated in FIG. 6 is cheaper to manufacture and results in less waste when discarded, which decreases its overall environmental impact.

[0023] In comparison and as shown in FIGS. 3-4, the disclosed cosmetic container 100 has a renewable and environmentally friendly composition 142 which occupies the liquid-tight chamber 140 and is configured to create a similar optical illusion and weight as the transparent solid resin layer 210 (FIG. 5), but with a decreased manufacturing cost and environmental impact. As shown in FIG. 3, the composition 142 is a salt water solution having a salt concentration such that a refractive index of the salt solution is about 1.33. In other embodiments, other renewable and biodegradable compositions may be used. As referred to herein, the term "composition" includes solute/solvent combinations, solids or semi-solids, or any combination thereof. It can be appreciated by a person of skill in the art that other compositions or combinations of compositions may have varying refractive indices, freezing/melting points, and antimicrobial properties. In these other embodiments, the final refractive index of the composition or combination of compositions is about 1.33.

[0024] In an embodiment, the salt solution comprises sodium chloride dissolved in water, however in other embodiments, different salts and/or solvents may be used would be appropriate for the specific application. It can be understood by a person of ordinary skill in the art that the concentration of the salt solution or the amount of salt

dissolved in a particular solvent to achieve a refractive index of about 1.33 will depend on number of factors including, but not limited to, the solubility of the salt in the solvent, the temperature of the solvent, and the ambient air pressure.

[0025] As shown in FIG. 4, the salt water solution has a greater refractive index than water or air, which increases its optical illusion or distortion properties as compared to the embodiment of a cosmetic container 300 in FIG. 6. The salt solution also resists freezing and cracking of the cosmetic container 100 during storage and shipping as the freezing point of salt water is lower than that of water. In addition, the antimicrobial properties of the salt solution prevent or hinder microbial growth that can cause spoilage or contamination of the product.

[0026] Additional embodiments include any one of the embodiments described above and described in any and all exhibits and other materials submitted herewith, where one or more of its components, functionalities or structures is interchanged with, replaced by or augmented by one or more of the components, functionalities or structures of a different embodiment described above.

[0027] It should be understood that various changes and modifications to the embodiments described herein will be apparent to those skilled in the art. Such changes and modifications can be made without departing from the spirit and scope of the present disclosure and without diminishing its intended advantages.

[0028] Although several embodiments of the disclosure have been disclosed in the foregoing specification, it is understood by those skilled in the art that many modifications and other embodiments of the disclosure will come to mind to which the disclosure pertains, having the benefit of the teaching presented in the foregoing description and associated drawings. It is thus understood that the disclosure is not limited to the specific embodiments disclosed herein above, and that many modifications and other embodiments are intended to be included within the scope of the appended claims. Moreover, although specific terms are employed herein, as well as in the claims which follow, they are used only in a generic and descriptive sense, and not for the purposes of limiting the present disclosure, nor the claims which follow.

1. A cosmetic container comprising:

- an outer shell comprising a concave inner surface defining an inner space;
- an inner shell comprising a top and a bottom, the bottom being at least partially located within the inner space of the outer shell, and one or more engagement features disposed proximate the top;
- a liquid-tight chamber defined between the outer shell and the inner shell; and
- a material with a refractive index greater than 1.0 located within the liquid-tight chamber.

2. The cosmetic container of claim 1 further comprising a lid having an outer annular surface and an inner annular surface, wherein the inner annular surface comprises one or

more complimentary engagement features configured to interact with the one or more engagement features of the inner shell.

3. The cosmetic container of claim 1, wherein the material is a salt solution.

4. The cosmetic container of claim 3, wherein the salt solution comprises sodium chloride dissolved in water.

5. The cosmetic container of claim 3, wherein the refractive index of the salt solution is about 1.33.

6. The cosmetic container of claim 1, wherein the outer shell further comprises a bottom surface having at least one indentation or depression that extends into the liquid-tight chamber.

7. The cosmetic container of claim 1, wherein the outer shell further comprises a shoulder configured to engage a portion of the inner shell.

8. The cosmetic container of claim 2, wherein the lid further comprises one or more surface features configured to assist in coupling and decoupling the lid to the inner shell.

9. The cosmetic container of claim 1, wherein the material is renewable and biodegradable.

10. A container comprising:

- an outer shell comprising a top and a bottom, the outer shell comprising an inner surface defining an interior space;
- an inner shell comprising a top and a bottom and is coupled to the outer shell, wherein the inner shell is at least partially located within the interior space of the outer shell;
- a liquid-tight chamber defined between the outer shell and the inner shell; and
- a material with a refractive index greater than 1.0 located within the liquid-tight chamber.

11. The container of claim 10, further comprising a lid having an outer annular surface and an inner annular surface, wherein the inner annular surface is configured to removably couple with a portion of the inner shell.

12. The container of claim 10, wherein the inner shell further comprises one or more engagement features disposed proximate the top.

13. The container of claim 11, wherein the inner annular surface of the lid comprises one or more complimentary engagement features configured to interact with the one or more engagement features of the inner shell.

14. The container of claim 10, wherein the material is a salt solution.

15. The container of claim 14, wherein the refractive index of the salt solution is about 1.33.

16. The container of claim 10, wherein the outer shell further comprises a shoulder configured to engage a portion of the inner shell.

17. The container of claim 11, wherein the lid further comprises one or more surface features configured to assist in coupling and decoupling the lid to the inner shell.

18. The container of claim 10, wherein the material is renewable and biodegradable.

* * * * *