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(54) **CONE SLEEVE**

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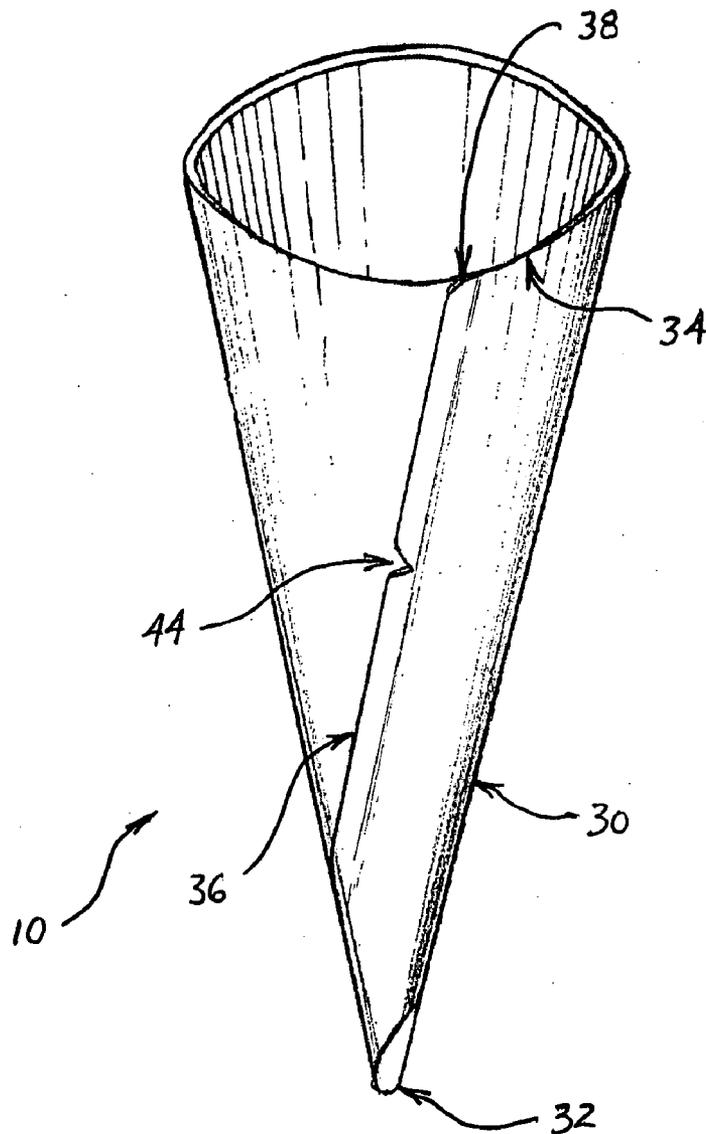
(57) **ABSTRACT**

A package for hand-held frozen ice cream cones comprising a rolled, cone-shaped polymer film sleeve. The package is made from at least one layer of polymer film, and is sealed along a side wall. The package has a tip at a first end and may be open or sealed at a second end, and if sealed, may include a lid.

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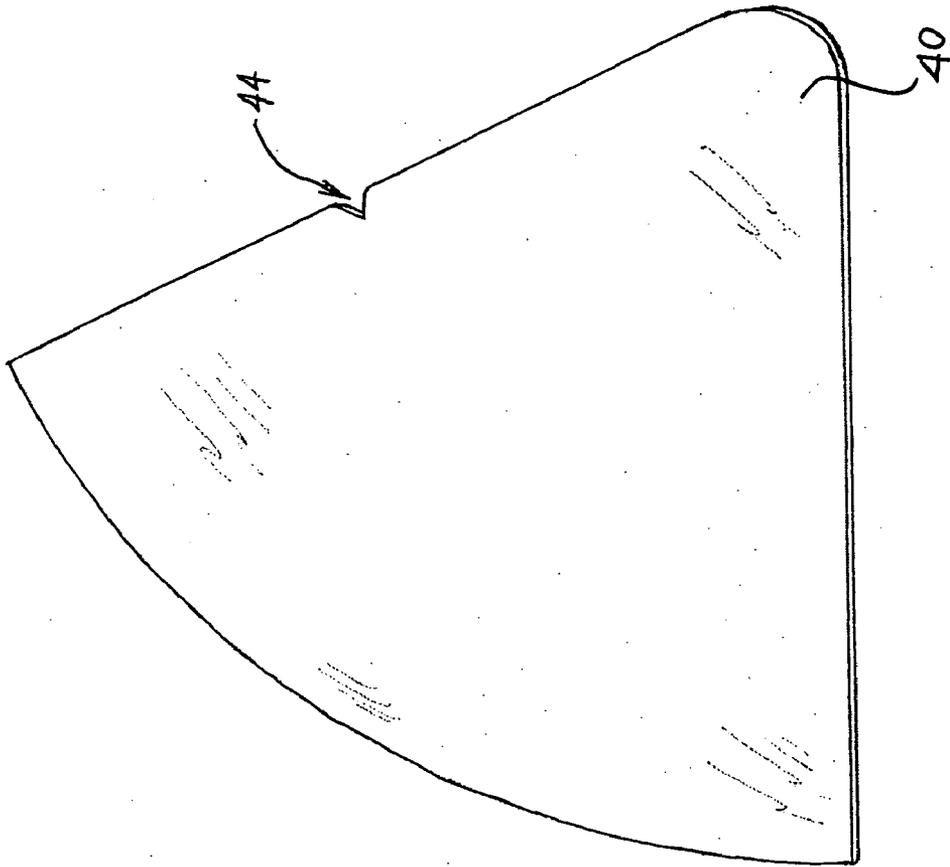


FIG. 2

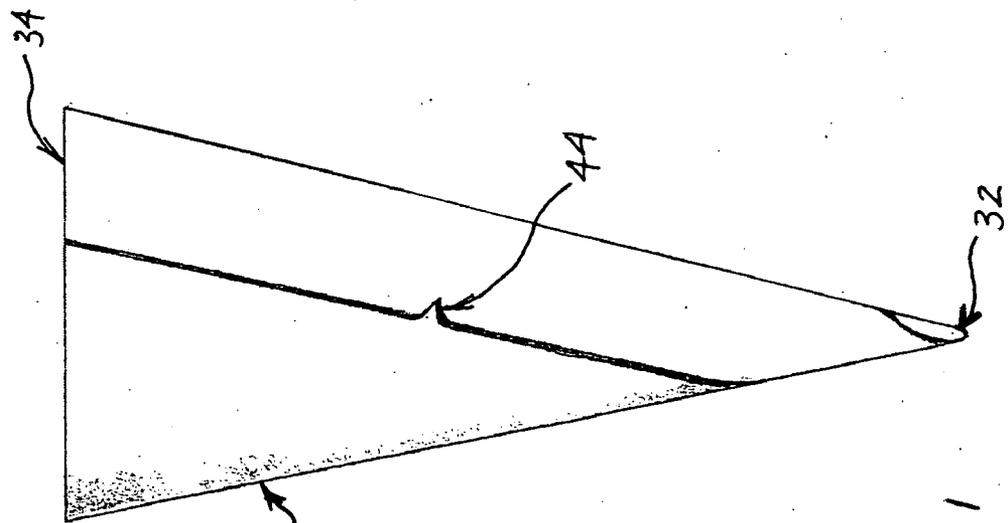


FIG. 1

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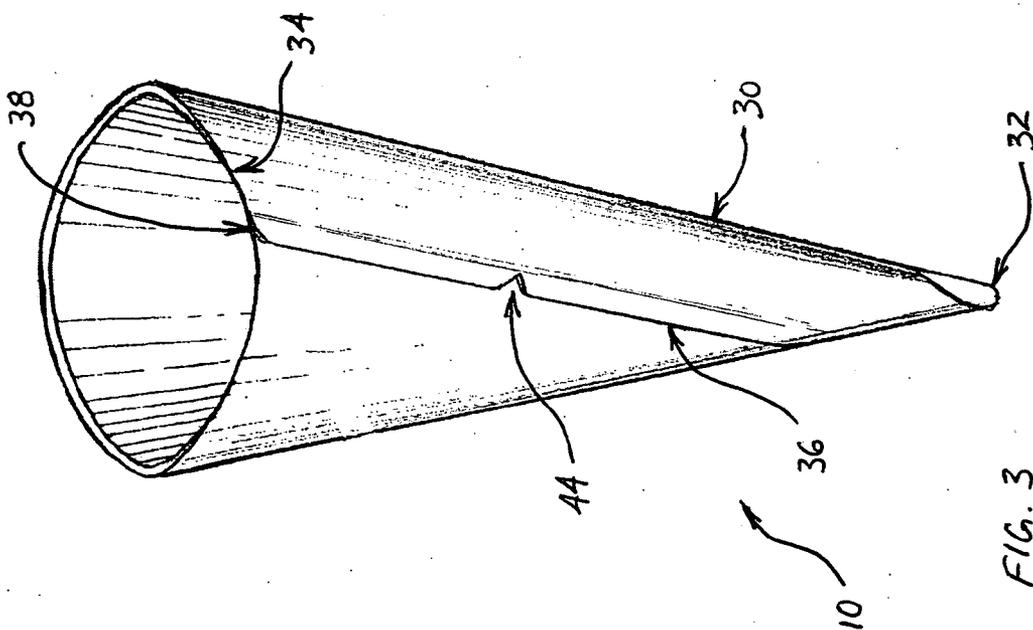


FIG. 3

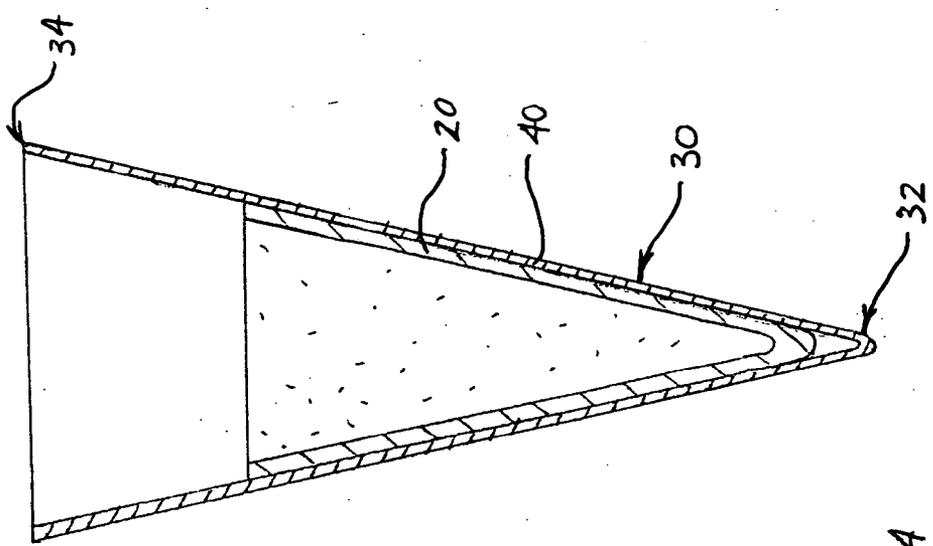
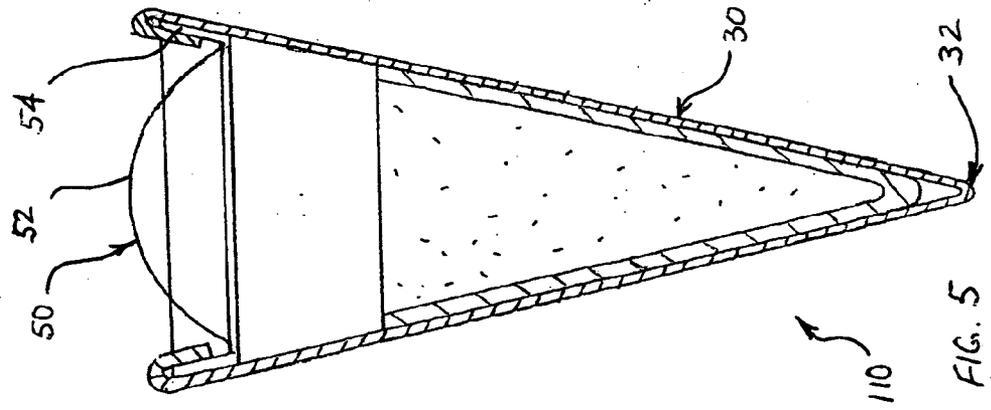
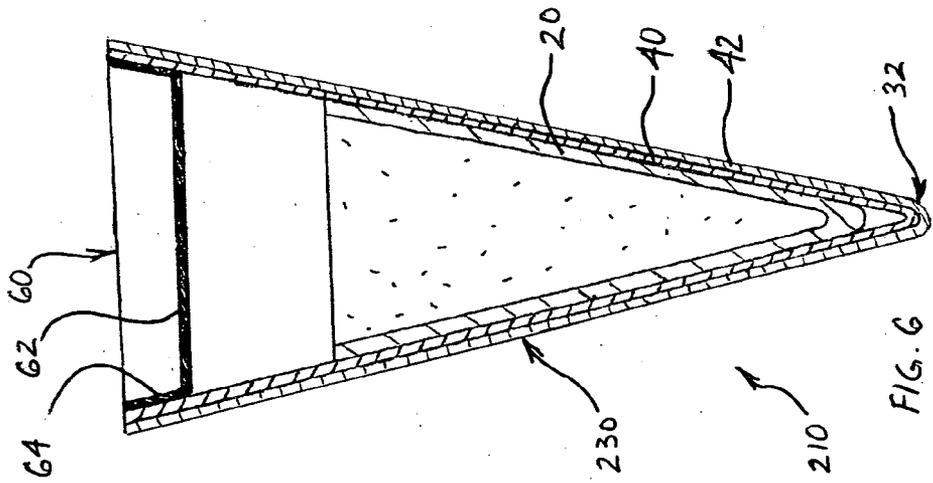
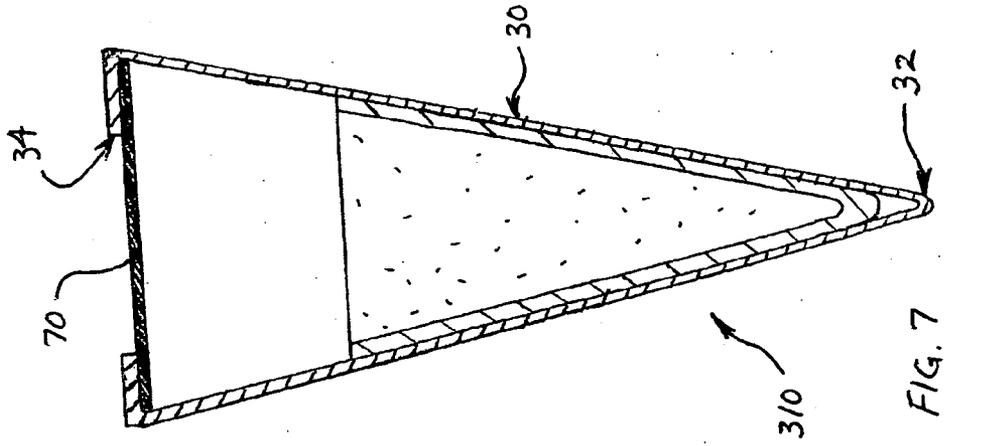
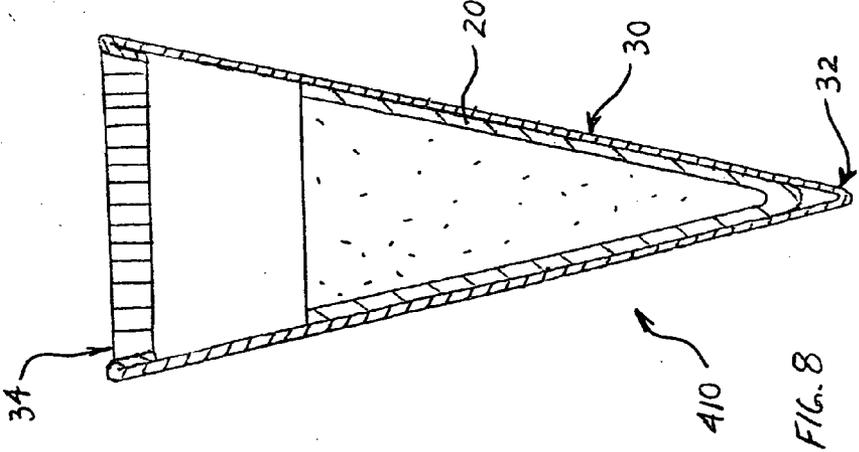
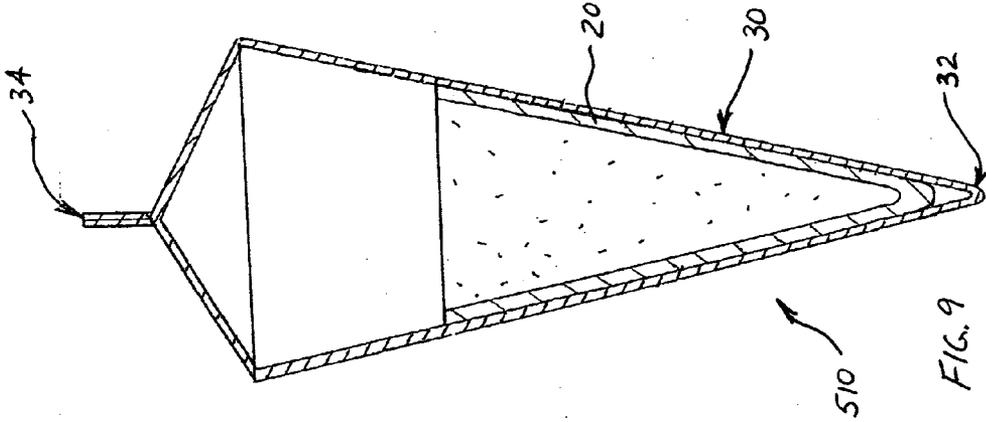


FIG. 4





**CONE SLEEVE**

**BACKGROUND OF THE INVENTION**

[0001] 1. Field of the Invention

[0002] The present invention generally relates to packaging for components of frozen novelties. More particularly, the invention relates to a unique form of a cone sleeve used for pre-packaged ice cream cone desserts.

[0003] 2. Discussion of the Prior Art

[0004] Pre-packaged frozen novelties, are quite common, including desserts such as ice cream cones. Such ice cream cones typically are individually wrapped in a corresponding cone-shaped sleeve covering at least the cone portion of the frozen novelty product. The cone sleeves are commonly made with a paper, foil or paper and foil laminate substrate that is rolled into a cone shape, having a tip at one end and being open at the other end. Such cone-shaped packages offer structural protection for the cone, and often include a lid, attached by means such as gluing or crimping the lid to the open end of the cone shaped sleeve.

[0005] While paper is a good material for receiving printing, it has drawbacks as a material for cone sleeves. Paper tends to absorb moisture and does not provide a good barrier to moisture or air, which are harmful to the freshness of a product. Also, paper, foil or paper and foil laminates often present difficulties to the consumer when trying to open the individually wrapped ice cream cone packages. Such materials can be difficult to tear, and often tear in unpredictable patterns. Therefore, they may include perforations to facilitate tearing. However, the perforations then compromise the effectiveness of the air and moisture barrier provided by the cone sleeve. Cone sleeves employing foil also can raise issues when subjecting the products to metal detection testing.

**SUMMARY OF THE INVENTION**

[0006] The purpose and advantages of the invention will be set forth in and apparent from the description and drawings that follow, as well as will be learned by practice of the invention.

[0007] The new invention replaces the paper, foil or laminated paper and foil substrate historically used for the conical sleeves that surround individually pre-packaged ice cream cones with a cone-shaped sleeve made at least of one layer of a polymer film. The polymer film layer also may be included in a laminate with at least another layer of polymer film or with a layer of metallized polymer film. These new polymer film based cone sleeves will provide three unique advantages that are not all present in sleeves of current substrates. First, polymer film based cone sleeves will provide a superior air and moisture barrier that will enhance product quality in the form of maintaining the texture and freshness, resulting in increased shelf life and consumer satisfaction. Second, the use of polymer film based materials will provide enhanced graphic display allowing for excellent printing quality, including techniques such as reverse printing which currently is not available on paper based sleeves. Third, such polymer film based materials provide greater ease and predictability in tearing, without the need for perforations that would otherwise compromise the integrity and barrier characteristics of the package. If the polymer

film used does not include any metal, the cone sleeves additionally may be passed through metal detection devices, providing enhanced security checks, unlike sleeves using prior art metal foils. Accordingly, the present invention addresses shortcomings in the prior art, while providing the above mentioned desirable features in a unique cone-shaped sleeve product.

[0008] The present invention is generally embodied in a package for hand-held frozen ice cream cones comprising a rolled, cone-shaped polymer film sleeve. In a first aspect of the invention, the film sleeve is sealed along a side wall. In a second aspect of the invention, the package further comprises a tip at a first end and is sealed at a second end opposite the tip. In a third aspect of the invention, the package may further comprise a laminate of at least two layers of polymer film. In a fourth aspect of the invention, the seal at the second end may be formed by a heat seal operation. In a fifth aspect of the invention, the package further includes a lid located at the second end.

[0009] It is to be understood that both the foregoing general description and the following detailed description are exemplary and provided for purposes of explanation only, and are not restrictive of the invention, as claimed. Further features and objects of the present invention will become more fully apparent in the following description of the preferred embodiments and from the appended claims.

**BRIEF DESCRIPTION OF THE DRAWINGS**

[0010] In describing the preferred embodiments, reference is made to the accompanying drawing figures wherein like parts have like reference numerals, and wherein:

[0011] **FIG. 1** is a side elevation of a package for a hand-held frozen ice cream cone having a rolled, cone-shaped polymer film sleeve of the present invention.

[0012] **FIG. 2** is a perspective view of a polymer film portion cut into a shape to be formed into a cone sleeve as shown in **FIG. 1**.

[0013] **FIG. 3** is a further perspective view of the package of **FIG. 1**.

[0014] **FIG. 4** is a cross-section view of an ice cream cone in a cone sleeve of the present invention having an extended portion at the end opposite the tip.

[0015] **FIG. 5** is a cross-section view of a further embodiment of a package of the present invention further including a domed lid.

[0016] **FIG. 6** is a cross-section view of a further embodiment of a package of the present invention including a two-layer laminate and a recessed lid.

[0017] **FIG. 7** is a cross-section view of a further embodiment of a package of the present invention including a flat lid.

[0018] **FIG. 8** is a cross-section view of an ice cream cone in a cone sleeve of the present invention having the polymer film of the cone sleeve pressed together, sealed and folded toward the ice cream cone at the second end.

[0019] **FIG. 9** is a cross-section view of an ice cream cone in a cone sleeve of the present invention having the polymer film of the cone sleeve pressed together and sealed at the second end.

[0020] It should be understood that the drawings are not to scale. While some details of the preferred embodiments of the package of the present invention, and other plan and section views of the particular components, have been omitted, such details are not per se part of the present invention and are considered within the comprehension of those skilled in the art in light of the present disclosure. It also should be understood that the present invention is not limited to the preferred embodiments illustrated.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0021] Referring generally to FIGS. 1-9, it will be appreciated that a package for hand-held frozen ice cream cones 20 (ice cream not shown) having a rolled, cone-shaped polymer film cone sleeve 30 generally may be embodied within numerous configurations.

[0022] A package 10 having a polymer film ice cream cone sleeve 30 of the present invention, as shown in FIGS. 1 and 3, may be produced by using current generally accepted methods of spiral winding a substrate portion. In FIG. 2, film layer 40 is shown in a flat pre-rolled format. Once wound around a conical mandrel, film layer 40 becomes a rolled, cone-shaped sleeve 30. The sleeve 30 has a first end with a closed tip 32 and an open second end 34 opposite the first end 32. The stock polymer film product may be fed into a winding machine either in a continuous roll stock form or by means of dispensing pre-die-cut material through a loading magazine. In either format, a film layer 40, such as shown in FIG. 2, is wound around a conical mandrel. The film layer is preferably cut into a substantially triangular shape and may have a rounded apex to facilitate forming tip 32. The polymer film layer 40 may be of many types, with the preferred material being a polypropylene film manufactured by Arjobex. It is preferred that the film layer 40 be structurally capable of maintaining a cone-shape, with the preferred single layer material being approximately 4.5 mils thick. Other thicknesses and materials may be suitable.

[0023] The film layer 40 also may be a part of a laminate substrate which includes two or more layers of polymer film, such as shown in FIG. 6 with additional polymer film layer 42. Such laminates may be formed by known cohesive technology such as by heat sealing or co-extruding the layers prior to rolling into a cone-shaped sleeve 230. Also, at least one of the layers may have a metallized coating, depending on the desired characteristics.

[0024] Upon winding the film layer 40 or laminate into a cone-shaped sleeve 30, it is desirable to seal the sleeve along a side wall 36 by using cold or hot production-applied adhesive, although pre-applied pressure sensitive adhesive also may be used. One may use both a cold adhesive, and for initial bonding, a heat-activated adhesive, hot glue or other heat sealing operation to complete the seal along the side wall. It is preferred that any adhesive be applied at a small distance, such as 3-7 millimeters, from the edge of the film layer. This seal location essentially forms a small flap 38 along the outer side wall seam to enhance the consumer's ability to grasp the film to tear the package away, exposing the ice cream cone 20. To further control the location and predictability of the tearing, it also is preferred that the film layer 40 or laminate have a notch 44 pre-cut in the flap edge, as shown in FIGS. 1-3.

[0025] The open end 34 of sleeve 30 may extend only to the top of the cone portion of ice cream cone 20 to protect the cone. Alternatively, referring to the embodiment in FIG. 4, it can be seen that the open end 34 of cone-shaped sleeve 30 may extend beyond the cone 20. The extended portion at open end 34 may accommodate various ways of sealing a package in accordance with the present invention, as seen in FIGS. 5-9. For instance, the package 110 in FIG. 5 includes a dome-shaped lid 50. Dome-shaped lid 50 is preferably made of a transparent polymer material and has a dome portion 52 and an upward turned outer edge 54. The upper edge of cone sleeve 30 at open end 34 may be folded over edge 54 of lid 50.

[0026] Referring to FIG. 6, the package 210 has a sleeve 230 that is formed with a laminate of polymer film layers 40 and 42. The package 210 includes a press-in, recessed lid 60 having a flat center portion 62 and an upward turned outer edge 64. Depending on the material used for lid 60, which may be of a variety of choices, including at least a transparent or opaque polymer, a paper, a coated paper or a foil, lid 60 may be sealed to sleeve 30 by a corresponding snap-in structure known in prior art packages, or by an adhesive or heat seal operation.

[0027] A further alternative lid combination is shown with the package 310 in FIG. 7, where a flat disk lid 70 is shown in sealing engagement with cone sleeve 30. The upper edge of cone sleeve 30 at open end 34 is shown crimped over flat disk lid 70. Once again, depending on the material of lid 70, cone sleeve 30 may be simply crimped, or may further utilize adhesive or a heat sealing operation to enhance the seal engagement with lid 70.

[0028] The alternative embodiments shown in FIGS. 8 and 9 provide at least two further ways in which a seal may be formed at open end 34, but without use of a separate lid. In FIG. 8, cone sleeve 30 not only is gathered and pressed together, but also is folded toward the ice cream cone 20 to seal package 410. FIG. 9 shows a further sealed package 510 without a separate lid, where the cone sleeve 30 is pressed together at open end 34. In the embodiments of FIGS. 8 and 9, cone sleeve 30 may be sealed with the use of adhesive, or may be heat-sealed where pressed together.

[0029] It will be appreciated that the package for hand-held frozen ice cream cones of the present invention may be provided in various configurations, whether open or sealed. Moreover, a variety of suitable materials of construction, configurations, shapes and sizes for the cone-shaped sleeves may be used to satisfy the particular needs and requirements of ice cream cone producers. It also should be understood that where use of a lid is preferred, a variety of materials, constructions, configurations, shapes and sizes for lids may be used in completing ice cream cone packages. It will be apparent to those skilled in the art that various modifications can be made without departing from the scope or spirit of the present invention.

What is claimed is:

1. A package for hand-held frozen ice cream cones comprising a rolled, cone-shaped polymer film sleeve.
2. The package of claim 1 wherein the sleeve is sealed along a side wall.
3. The package of claim 2 wherein a flap of the polymer film is formed adjacent the seal along the side wall and the flap further comprises a notch.

- 4. The package of claim 2 wherein the seal along the side wall is formed with an adhesive applied to the film.
- 5. The package of claim 4 wherein the adhesive further comprises a pressure sensitive adhesive applied to the film prior to rolling the film into a cone shape.
- 6. The package of claim 2 wherein the seal along the side wall is formed via a heat seal operation.
- 7. The package of claim 1 wherein the cone-shaped sleeve further comprises a tip at a first end and is open at a second end located opposite the tip.
- 8. The package of claim 1 wherein the cone-shaped sleeve further comprises a tip at a first end and is sealed at a second end located opposite the tip.
- 9. The package of claim 8 wherein the seal at the second end is formed by a heat seal operation.
- 10. The package of claim 8 wherein the seal at the second end is formed at least in part by folding over the polymer film at the second end.
- 11. The package of claim 8 wherein the package further comprises a lid located at the second end.
- 12. The package of claim 11 wherein the lid is sealed to the sleeve.
- 13. The package of claim 12 wherein the lid is sealed to the sleeve by crimping the sleeve over a portion of the lid.
- 14. The package of claim 12 wherein the lid is sealed to the sleeve with an adhesive that engages the lid and the sleeve.
- 15. The package of claim 14 wherein the adhesive that seals the lid to the sleeve is applied to the polymer film prior to rolling the polymer film into the cone-shaped sleeve.
- 16. The package of claim 14 wherein the adhesive that seals the lid to the sleeve is applied to the cone-shaped sleeve prior to the lid being joined with the sleeve.
- 17. The package of claim 14 wherein the adhesive that seals the lid to the sleeve is applied to a surface of the lid prior to the lid being joined with the sleeve.
- 18. A package for hand-held frozen ice cream cones comprising a rolled, cone-shaped polymer film sleeve, the sleeve further comprising a laminate of at least two layers with each layer being a polymer film.
- 19. The package of claim 18 wherein the sleeve is sealed along a side wall.
- 20. The package of claim 19 wherein a flap of the laminate film is formed adjacent the seal along the side wall and the flap further comprises a notch.

- 21. The package of claim 19 wherein the seal along the side wall is formed with an adhesive applied to the laminate.
- 22. The package of claim 21 wherein the adhesive further comprises a pressure sensitive adhesive applied to the laminate prior to rolling the laminate into a cone shape.
- 23. The package of claim 19 wherein the seal along the side wall is formed via a heat seal operation.
- 24. The package of claim 18 wherein the cone-shaped sleeve further comprises a tip at a first end and is open at a second end located opposite the tip.
- 25. The package of claim 18 wherein the cone-shaped sleeve further comprises a tip at a first end and is sealed at a second end located opposite the tip.
- 26. The package of claim 25 wherein the seal at the second end is formed by a heat seal operation.
- 27. The package of claim 25 wherein the seal at the second end is formed at least in part by folding over the laminate at the second end.
- 28. The package of claim 25 wherein the package further comprises a lid located at the second end.
- 29. The package of claim 28 wherein the lid is sealed to the sleeve.
- 30. The package of claim 29 wherein the lid is sealed to the sleeve by crimping the sleeve over a portion of the lid.
- 31. The package of claim 29 wherein the lid is sealed to the sleeve with an adhesive that engages the lid and the sleeve.
- 32. The package of claim 31 wherein the adhesive that seals the lid to the sleeve is applied to the laminate prior to rolling the laminate into the cone-shaped sleeve.
- 33. The package of claim 31 wherein the adhesive that seals the lid to the sleeve is applied to the cone-shaped sleeve prior to the lid being joined with the sleeve.
- 34. The package of claim 31 wherein the adhesive that seals the lid to the sleeve is applied to a surface of the lid prior to the lid being joined with the sleeve.
- 35. The package of claim 18 wherein the at least two layers of polymer film are joined as a laminate by a heat seal operation.
- 36. The package of claim 18 wherein the at least two layers of polymer film are co-extruded as the laminate.
- 37. The package of claim 18 wherein at least one of the layers is a polymer metallized film.

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