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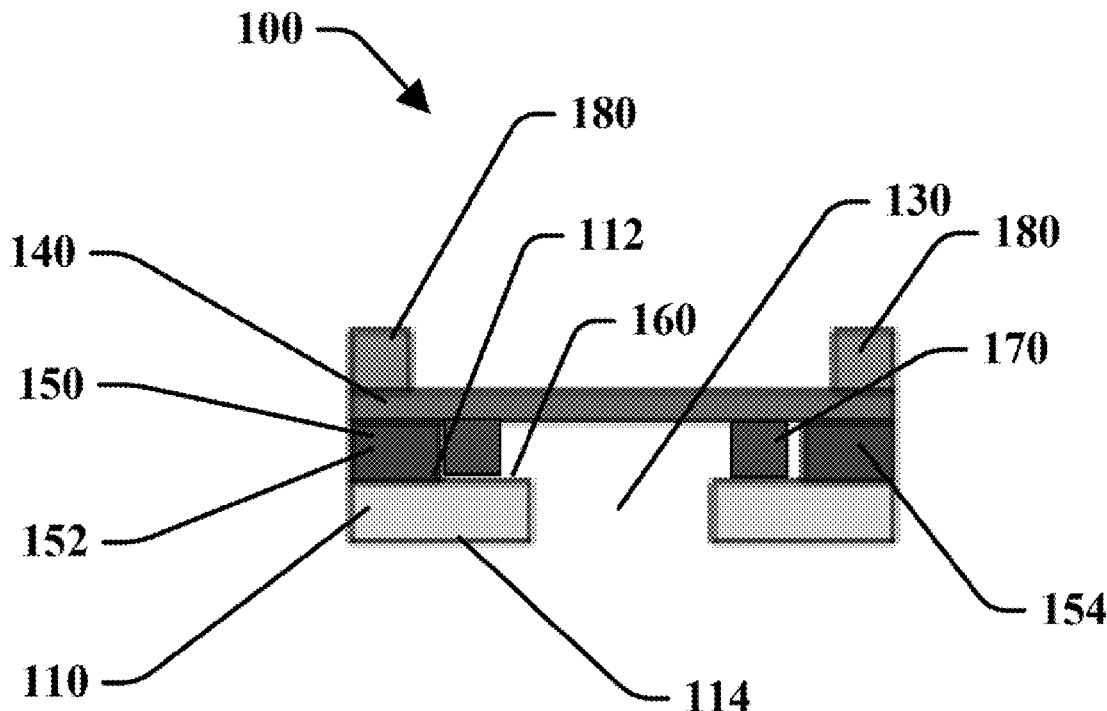
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(2) Date: **Dec. 14, 2017****ABSTRACT**

The present invention relates to a bi-layer pre-oil valve assembly and method of making that may be attached to a receptacle that provides a fluid resistant seal but allows for the expulsion of air pressure from the interior of a receptacle. The valve assembly may include a base layer, an adhesive layer, a fluid layer, and a material layer. The fluid layer may be a low viscosity fluid that is applied during the manufacturing of the valve and incorporated into the layer of the valve. The base layer may include an aperture. The adhesive layer may be provided about a portion of the perimeter of the base layer to define a non-adhesive portion. The fluid layer is applied along a portion of the non-adhesive portion of the base layer to define a channel or path to facilitate the release of gas or fluid from the receptacle.

Related U.S. Application Data

(60) Provisional application No. 62/181,562, filed on Jun. 18, 2015.



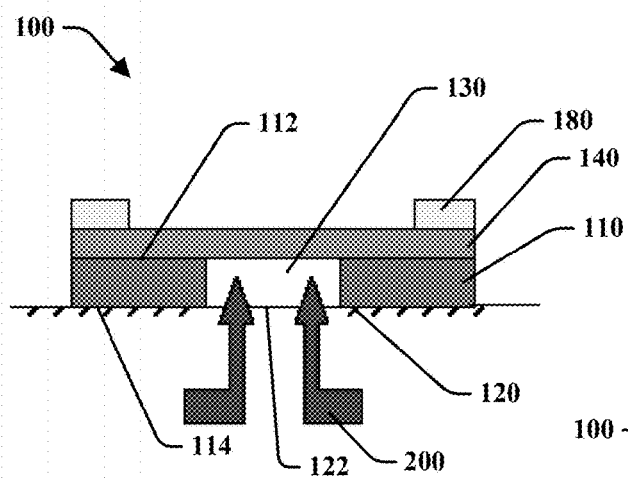


FIG. 1

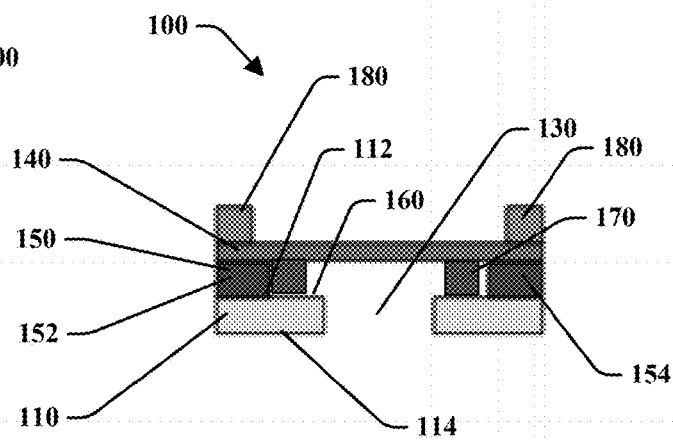


FIG. 2

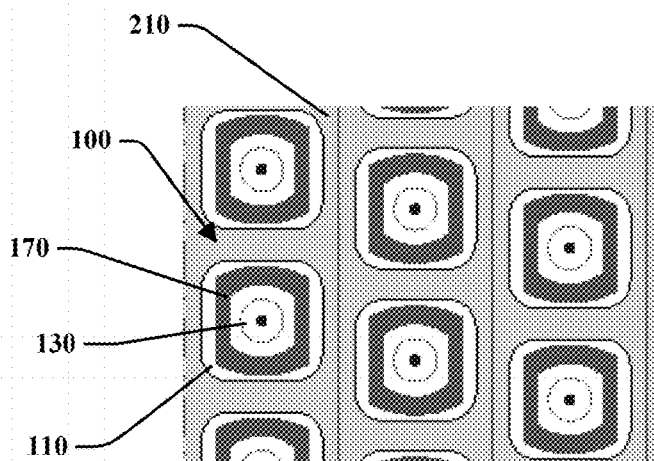
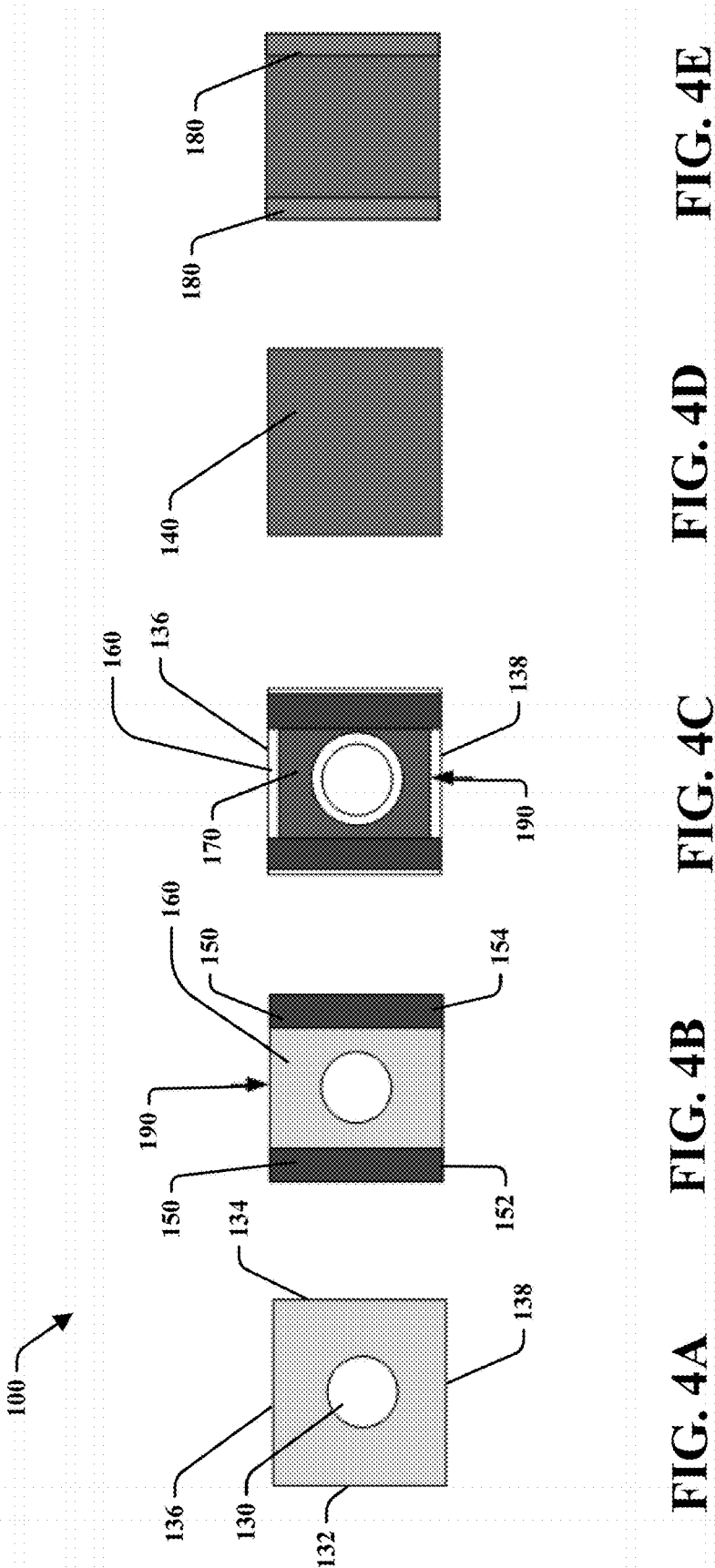


FIG. 3



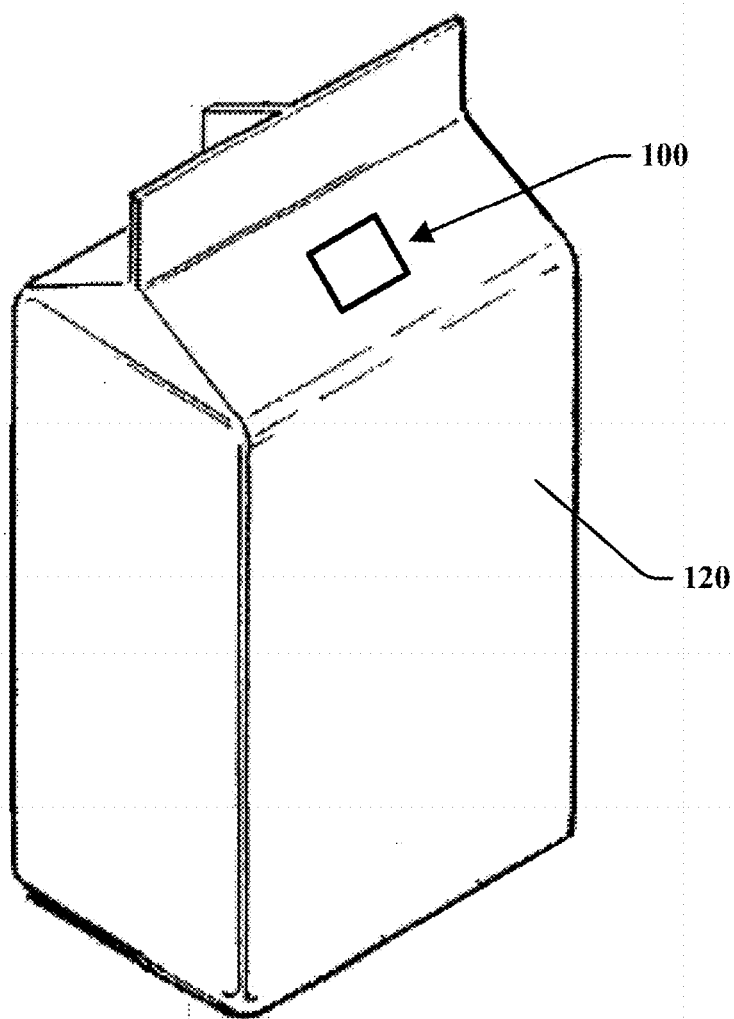


FIG. 5

PRE-OILED VALVE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority from U.S. Provisional Patent Application No. 62/181,562, entitled, "PRE-OILED VALVE" filed Jun. 18, 2015, which is incorporated by reference herein.

FIELD OF THE INVENTION

[0002] The present invention relates to fluid control devices, such as valves. More specifically, the present invention relates to a one-way valve assembly that provides a hermetic and/or fluid resistant seal but which allows for the expulsion of gas and related pressure from the interior of a receptacle.

BACKGROUND

[0003] Various types of packaging options are available today and are often used by consumers, industries, and numerous retailers to store food and other consumables for later use or consumption. It is also important for specific food retailers to present a product that appears attractive and desirable to consumers to increase product sales and promotion of the particular brand.

[0004] Coffee beans have a tendency to release a significant amount of gas after the roasting process when the coffee beans have already been placed in a sealed container. This presence of excessive gas within the sealed container may result in the container bulging and changing its shape or even bursting which makes the product unattractive to consumers and directly impacts the manufacturer by decreasing the amount of sales of those coffee beans. In addition, retailers may also be impacted by having to clean store or warehouse shelves and remove contaminants from other packages and products that have burst due to excess gas within a container.

[0005] As a result of this tendency for roasted coffee beans to release gas, valves have been applied to packages containing roasted coffee beans in order to allow for the release of this gas from the interior of the container to the external environment. In order to provide a seal, an oil layer is sometimes applied to coffee valves by the converter or roaster which adds additional protection to the container from the outside environment. The oil layer is disposed between the valve assembly and the package. Currently, the coffee roaster applies the oil to the lower surface of the valve after manufacturing of the package but before application of the valve to the package containing the coffee beans. This is inefficient and can result in a large amount of waste because the coffee roaster may not correctly add the oil to the valve, in that too much (or too little) oil may be applied. If the oil is not properly applied by the converter, the valve may not operate correctly destroying the integrity of the package and potentially limiting the freshness of product within the container.

[0006] Disclosed are embodiments of a fluid valve assembly that may solve the problem of having the coffee roaster apply oil to the valve after manufacturing of the package. The disclosed valve assembly may include a controlled amount of oil built into the valve assembly before application of the valve assembly to a particular package containing product. Such a construction may reduce waste and stream

line the manufacturing process. Disclosed is a valve assembly that includes a pre-applied, predetermined amount of oil that may be applied without the possibility of coffee roaster error.

SUMMARY

[0007] The embodiments of the present invention described below are not intended to be exhaustive or to limit the invention to the precise forms disclosed in the following detailed description. Rather, the embodiments are chosen and described so that others skilled in the art may appreciate and understand the principles and practices of the present invention.

[0008] The present invention provides a bi-layer pre-oiled fluid valve assembly including a base layer having a top and bottom surface and at least one aperture. The bottom surface of the base layer may be configured to attach to a receptacle or a container. A layer of adhesive may be applied to a top surface of the base layer in a pattern along a first edge and an opposite second edge of the base layer. A third edge and an opposite fourth edge may be disposed between the first edge and second edge. The top surface of the base layer may include a non-adhesive area that generally surrounds the aperture and extends between the third edge to the fourth edge and the pattern of adhesive. A discontinuous fluid layer, such as a viscous solution, e.g. oil, may be provided about at least a portion of the non-adhesive portion. A material layer may be provided over the adhesive layer and the discontinuous fluid layer. The bi-layer fluid control device forms an outgassing path through the aperture and oil layer. The base layer, and material layer may be aligned to allow for the expulsion of gases from the interior of a receptacle when the bi-layer pre-oil valve assembly is attached to a receptacle. The assembly may be configured to selectively open to permit a flow through the valve through a channel or outgassing path in response to a pressure differential sufficient to open the valve dynamically varies over time.

[0009] In one embodiment, the adhesive layer includes a first portion applied along the first edge and a second portion applied along the opposite second edge. The first portion may be spaced from the second portion and at least partially define a channel or outgassing path therebetween and may retain the fluid layer therein. The bi-layer pre-oiled fluid valve assembly may include a pair of rails attached to a top surface of the material layer. The rails may assist to prevent unintended closure of the outgassing path by abutting against objects in lieu of the top surface of the material layer.

[0010] In another embodiment, provided is a pre-oiled valve assembly. The assembly includes a base layer having a top surface and a bottom surface, the base layer defining an opening that is configured to be aligned with an opening of a receptacle. An adhesive layer disposed on the top surface of the base layer, the adhesive layer provided in a discontinuous pattern about the top surface of the base layer that at least partially defines a channel. A fluid layer disposed on the base layer, the fluid layer being disposed in an area not covered by the adhesive layer. A material layer overlying the adhesive layer and the fluid layer. At least one rail member positioned along the material layer. A perimeter of the base layer may be defined by a first edge and an opposite second edge and a third edge and an opposite fourth edge wherein the third edge and fourth edge extend between the first edge and the second edge. The adhesive layer may

include a first portion and a second portion, the first portion spaced from the second portion along opposite sides of the aperture.

[0011] The present invention also includes a method of constructing the bi-layer pre-oiled fluid valve assembly of the present invention. The method includes providing a base layer having a perimeter defined by first edge with an opposite second edge and a third edge with an opposite fourth edge, the third and fourth edges spaced between the first and second edges. At least one aperture is provided in the base layer. An adhesive layer is provided along the base layer. The adhesive layer having a first portion adjacent the first edge of the base layer and a second portion adjacent a second edge of the base layer wherein the first portion and second portion of the adhesive layer define a non-adhesive portion along the base layer that generally circumscribes the aperture. A fluid layer is provided within the area of the non-adhesive portion of the base layer. A material layer is attached to the adhesive layer and over the fluid layer wherein an outgassing path is formed through the aperture and fluid layer below the material layer. The bi-layer pre-oiled valve may be attached to a receptacle wherein the base layer and the material layer allow for the expulsion of gases from an interior of the receptacle. The first and second adhesive portions may extend from the third edge to the fourth edge and the non-adhesive portion may extend from the third edge to the fourth edge. The fluid layer may be provided along the base layer prior to the application of the material layer. The fluid layer may be printed along the base layer prior to the application of the material layer. At least one rail may be attached to the material layer.

[0012] In one embodiment, the method includes providing a release liner and applying a first adhesive layer on the release liner. A plurality of base layers may be provided on the release liner wherein a plurality of bi-layer pre-oil valves may be assembled on the release liner.

[0013] Other features and advantages of the present invention will become apparent to those skilled in the art from the following detailed description. It is to be understood, however, that the detailed description of the various embodiments and specific examples, while indicating preferred and other embodiments of the present invention, are given by way of illustration and not limitation. Many changes and modifications within the scope of the present invention may be made without departing from the spirit thereof, and the invention includes all such modifications.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] These, as well as other objects and advantages of this invention, will be more completely understood and appreciated by referring to the following more detailed description of the presently preferred exemplary embodiments of the invention in conjunction with the accompanying drawings, of which:

[0015] FIGS. 1 shows a cross sectional view of a bi-layer pre-oiled valve assembly of the present invention;

[0016] FIG. 2 shows a cross sectional view of the bi-layer pre-oiled valve assembly;

[0017] FIG. 3 shows a top view of a plurality of bi-layer pre-oiled valve assemblies of the present invention;

[0018] FIGS. 4A-4E shows top views of a step by step assembly of the construction of the bi-layer pre-oil valve assembly of the present invention; and

[0019] FIG. 5 is a perspective view of a receptacle with the bi-layer pre-oiled valve assembly of the present invention.

DETAILED DESCRIPTION

[0020] Reference will now be made in detail to exemplary embodiments of the present teachings, examples of which are illustrated in the accompanying drawings. It is to be understood that other embodiments may be utilized and structural and functional changes may be made without departing from the respective scope of the present teachings. Moreover, features of the various embodiments may be combined or altered without departing from the scope of the present teachings. As such, the following description is presented by way of illustration only and should not limit in any way the various alternatives and modifications that may be made to the illustrated embodiments and still be within the spirit and scope of the present teachings.

[0021] The apparatuses and methods disclosed in this document are described in detail by way of examples and with reference to the figures. Unless otherwise specified, like numbers in the figures indicate references to the same, similar, or corresponding elements throughout the figures. It will be appreciated that modifications to disclosed and described examples, arrangements, configurations, components, elements, apparatuses, methods, materials, etc. can be made and may be desired for a specific application. In this disclosure, any identification of specific shapes, materials, techniques, arrangements, etc. are either related to a specific example presented or are merely a general description of such a shape, material, technique, arrangement, etc. Identifications of specific details or examples are not intended to be, and should not be, construed as mandatory or limiting unless specifically designated as such. Selected examples of apparatuses and methods are hereinafter disclosed and described in detail with reference made to FIGURES.

[0022] The present invention provides a bi-layer pre-oil valve assembly that allows for the expulsion of air, gas or other unwanted components from the interior of a container while providing a protective seal and substantially preventing unwanted components from the exterior of a receptacle from entering the interior of a receptacle. Examples of unwanted components include but are not limited to moisture, air, certain gases etc. The protective seal provided by the bi-layer valve assembly of the present invention may be a hermetic or water resistant seal while allowing the expulsion of excessive gas pressure from the interior of a receptacle to which the bi-layer valve assembly is attached. In a preferred embodiment of the present invention, the bi-layer valve assembly device is a one-way valve.

[0023] FIGS. 1-5 illustrates an embodiment of a bi-layer valve assembly 100 having a discontinuous fluid layer. FIG. 1 illustrates a cross sectional view along a portion of the assembly 100 of the present invention. A base layer 110 of the bi-layer valve assembly 100 may include a top surface 112 and an opposite bottom surface 114. The bottom surface 114 may be configured to attach to a container or receptacle 120 (FIG. 5). In one embodiment of the present invention, an adhesive layer (not shown) may be used to adhere the bottom surface 114 to the receptacle 120. The adhesive layer may be a permanent pressure sensitive adhesive, which is generally recognized as safe ("GRAS") for indirect food packaging. The wall structure of the receptacle may have at least one evacuation port 122 to allow the flow of excessive air or other unwanted components from the interior of a

receptacle 120 to the receptacle's surrounding environment. The base layer 110 may be generally a square or rectangular shape, it should be understood that other configurations are acceptable, as other arrangements are possible, including, but not limited to, circular, oval, or poly-sided. The base layer 110 may be made from any suitable material as desired. For example, the base layer 110 may be made from a polyester material or other polymer as this disclosure is not limited to such material.

[0024] The base layer 110 may include a perimeter having a first edge 132 opposite a second edge 134 and a third edge 136 opposite a fourth edge 138 such that the third edge 136 and fourth edge 138 extend between the first edge 132 and second edge 134. The base layer 110 may include at least one aperture 130. See FIG. 4A. In one embodiment, the base layer 110 includes a thickness between 3 mil and 15 mil, between 5 mil and 10 mil, and more particularly about 7 mil.

[0025] A layer of adhesive 150 (FIGS. 2 and 4B) may be applied to the top surface 112 of the base layer 110 in a pattern. The adhesive layer 150 may be applied along a portion of the first edge 132 and a portion of the second edge 134 of the top surface 112 of base layer 110. A non-adhesive portion 160 may remain on the top surface 112 of the base layer 110 and may circumscribe the aperture 130. The non-adhesive portion 160 may not have adhesive 150 thereon and may extend between the third edge 136 and the fourth edge 138. The non-adhesive area 160 may generally surround the aperture and extend between the patterned adhesive layer 150 between the first edge 132 and the second edge 134.

[0026] The adhesive layer 150 may include a particular pattern that includes a first portion 152 and a second portion 154 wherein the first portion 152 is spaced from the second portion 154 to at least partially define a channel 190 therebetween. The first portion 152 may be applied along the first edge 134 and the second portion may be applied along the opposite second edge 134. The adhesive layer 150 may be a form of an epoxy or acrylic or rubber based adhesive which is a versatile adhesive that can be used to join a variety of materials. Additionally, polyvinyl acrylate and toughened acrylics may also serve as suitable adhesives for selected embodiments. It is also contemplated that the adhesive layers may be a type of permanent adhesive in order to facilitate permanent adhesion of respective components and/or elements. The adhesive layer 150 may include a thickness between about 0.1 mil to about 3 mil, between about 1 mil to about 2 mil, and more particularly is about 1.5 mil.

[0027] A discontinuous fluid layer 170, such as a viscous solution, e.g. oil, may be provided about at least a portion of the non-adhesive portion 160. See FIG. 4C. The fluid layer 170 may generally circumscribe the aperture 130 and may extend inwardly from the third edge 136 and the fourth edge 138. The fluid layer 170 may be spaced from an edge of the aperture 130 along the top surface 112 of the base layer 110. In this configuration, portions of the non-adhesive portion about the aperture 130, third edge 136 and fourth edge 138 remain free of oil and adhesive.

[0028] A material layer 140 may be provided over the adhesive layer 150 and the discontinuous fluid layer 170. The bi-layer pre-oil valve assembly 100 may form an outgassing path through the aperture 130 and oil layer 170. The base layer 110 and material layer 140 may be aligned to allow for the expulsion of air/gas/fluid from the interior of

the receptacle 120 when the bi-layer pre-oil valve assembly is attached to a receptacle 120. The material layer 140 may generally align with the perimeter of the base layer 110. However, the present invention contemplates that the multiple layers may be splayed slightly out of alignment from one another or may be positioned so to accommodate packaging requirements or designs. The material layer 140 may be made from any suitable material as desired. For example, the material layer 140 may be made from a polyester material or other polymer as this disclosure is not limited to such material. In one embodiment, the material layer 140 includes a thickness between about 0.1 mil to about 3 mil, between about 1 mil to about 2 mil, and more particularly is about 1.5 mil.

[0029] In one embodiment, the bi-layer pre-oiled fluid valve assembly 100 may include a pair of rails 180 attached to a top surface of the material layer 140. The rails 180 may be aligned with the first edge 132 and the second edge 134 and be configured to assist to prevent the unintended closure of the outgassing path by abutting against packages or other objects to maintain space from the valve assembly 100. The rails 180 may prevent an object from abutting against the material layer 140 and pressing against the top surface 112 of the base layer 110 thereby closing the outgassing passage. In one embodiment, the rails 180 may be generally aligned with the pattern of adhesive 150 along opposite sides of the material layer 140. The rails 180 may have a generally elongated shape and may have a cross sectional shape such as and may include a thickness between about 5 mil to about 20 mil, between about 7 mil to about 15 mil, and more particularly is about 9 mil.

[0030] The "channel" 190 or outgassing passage, as illustrated in FIG. 4B and 4C, may be created by the aperture 130 in the base layer 110 the fluid layer 170 and the portions defined between the base layer 110 and material layer 140 along the third edge 136 and the fourth edge 138. The channel 190 may be defined by the pattern of adhesive 150 positioned along the first edge 132 and the second edge 134 and the non-adhesive portion 160. The pattern of adhesive 150 may include the first portion 152 spaced from the second portion 154 along opposite sides of the aperture 130. The channel 190 may retain the fluid layer 170 between the first portion 152 and the second portion 154. In one embodiment, the channel 190 may be open or unblocked such that gases and/or other fluids may be permitted to escape the otherwise sealed package by flowing essentially one way out through the channel 190 formed in the valve 100. Conversely, when the valve 100 is closed, the channel 190 is essentially closed and/or substantially blocked such that the flow through the channel 190 formed in the valve 100 is substantially inhibited. As pressure builds within the receptacle 120, gas/fluid 200 may be expelled by traveling through the channel 190. The gas 200 may travel through the aperture 130 and cause a slight bias within the fluid layer 170 such that the gas/fluid 200 may be expelled through the channel 190 along either the third edge 136 or the fourth edge 138. The fluid layer 170 may dynamically change the opening pressure of the valve 100. The third and fourth edges 136, 138 may correspond to a slight opening as the pressure in the fluid layer 170 facilitate the expulsion of gas/fluid 200 from the interior of the receptacle 120 through the channel 190 out the side of the bi-layer pre-oil valve assembly 100. The geometric configuration, material elasticity, and fluid viscosity may aid in facilitating the formation of the channel 190 and provid-

ing a one way path for the fluid or gas egress. The fluid layer 170 further aids in providing a secure seal once the gasses are expelled from the package as the viscosity and liquid adhesion between the fluid layer, base layer and material layer prevent exterior gas from entering the receptacle 120.

[0031] The gas/fluid 200 from the interior of the receptacle 120 may be expelled out of the interior of a receptacle 120 and through at least one evacuation port 122 and through the channel 190 created by the aperture 130 in the base layer 110 and through the fluid layer 170 along the non-adhesive portion 160. This channel 190 however may be covered by portions of the material layer 140. Because the slight openings along the third and fourth edges 136, 138 may be covered by the material layer 140, the pressure from the air expelled through these edges may be exerted on the material layer 140 and may make its way via the channel 190 and may ultimately be expelled along the third edge 136 or fourth edge 138 illustrated in FIGS. 4B and 4C.

[0032] The channel 190 may be created between the base layer 110 and the material layer 140 by the buildup of pressure underneath the material layer 140. A portion of the material layer 140, aligned along non-adhesive portions 160 along the third or fourth edges 136, 138 may temporarily unseat itself from the top surface 112 of the base layer 110 to permit the passage of air through the channel 190 and out the gas exit and into the surrounding environment. In this embodiment, the material layer 140 may be slightly flapped open to create the channel 190 as the interior pressure of the receptacle 120 is greater than the atmospheric pressure surrounding the valve assembly 100. Additionally, the orientation of the fluid layer 170 may be manipulated between the material layer 140 and the base layer 110 to assist with the creation of the channel 190.

[0033] Once the gas is expelled, the material layer 140 may reseal itself back onto the top surface 112 of the base layer 110 along the non-adhesive portion 160 creating a reusable bi-layer pre-oil valve assembly 100. As the gas is expelled, the atmospheric pressure that surrounds the valve assembly 100 may be greater than the interior pressure within the receptacle 120 wherein the material layer 140 may be in the closed position substantially against the fluid layer 170 at least partially along the non-adhesive portion 160.

[0034] The present invention further contemplates that the base layer 110 may have more than one aperture 130 corresponding to and aligning with a plurality of openings in the receptacle 120 to facilitate the expulsion of gas from the interior of a receptacle to the surrounding environment. The aperture 130 or apertures may be circular in shape but different geometrical shapes are contemplated by the present invention.

[0035] The base layer 110, the material layer 140 and/or the rails 180 of the present invention, in an exemplary embodiment, may be constructed out of any material as desired for a particular purpose or intended application. Generally, the base layer, material layer, and/or rails may be formed from a material suitable for serving as a suitable barrier to protect the contents of a container from external conditions. The respective layers may be formed from any suitable polymeric film including, but not limited to, polyolefin films, polyester films, polyvinyl films, etc. In embodiments, the face sheet may be formed from a material chosen from polyethylene, polypropylene, polyethylene terephthalate, polyvinyl chloride, or mixtures of two or more thereof.

Other materials include vinyl (PVC), polystyrene, polyester such as polyethylene terephthalate (PET), or polyolefin such as polypropylene including, for example, oriented polyolefins such as biaxially oriented polypropylene (BOPP). Additionally, the respective layers may be made from recycled or compostable film materials. The present invention contemplates that the base layer 110, the material layer 140, and/or rails 180, do not need to be constructed out of the same type of material and may be dissimilar materials. In one embodiment, the base layer 110 and the material layer 140 may be constructed out of clear PET. The present invention further contemplates that pigments may be added to the base layer 110 and material layer 140 in order to provide a colored multi-layer construction. Additionally, any other material such as a suitably flexible films or sheets of material such as a polymer film or foil laminate are contemplated by this disclosure.

[0036] In the present invention the adhesive layer 150 may be a pressure sensitive adhesive. The adhesive may be a form of an epoxy adhesive which is a versatile adhesive that can be used to join a variety of materials. Additionally, polyvinyl acrylate and toughened acrylics would also serve as suitable adhesives for the present invention. However, it is contemplated that the layer of adhesive 150 may also be a type of permanent adhesive in order to facilitate permanent adhesion. The adhesive that is selected is one that is generally recognized as safe ("GRAS"). Additionally, the layer of adhesive may be applied in a pattern of water based adhesive dots. These dots may be tinted different colors. The adhesive layers may be applied via printing or other methods known in the art.

[0037] The present invention contemplates that the discontinuous fluid layer 170 may be a low viscosity fluid such as an oil. More specifically the oil may be a silicone, mineral or vegetable oil. Additionally, the fluid layer may also be another substance with a viscosity similar to that of oil or lower than oil but yet one that is still flowable. The fluid layer 170 of the present invention provides a sealant to promote selective adhesion of the base layer 110 to the material layer 140 at least partially along the non-adhesive portion 160. The fluid layer 170 may prevent the entrance of unwanted components from the surrounding environment into the interior of a receptacle 120.

[0038] FIG. 1 illustrates assembly 100 of the present invention adhered to the receptacle 120. The receptacle 120 may be containers or packages that hold coffee beans, for example, or any other environment where an internal pressure builds up within the receptacle 120 and it is desirable to release such pressure. The valve assembly 100 may be adhered over an evacuation port 122 in the wall structure of the receptacle 120. Types of receptacles that may utilize the bi-layer pre-oil valve assembly 100 of the present invention are numerous and may have many geometrical shapes and the products contained within the receptacles can vary as well. The present invention contemplates that the at least one aperture 130 in the base layer 110 may be aligned with the evacuation port in the receptacle 120 in order to facilitate expulsion of unwanted components but it is not required.

[0039] It is contemplated that the bi-layer pre-oil valve assembly 100 of the present invention is activated to release excess gas pressure from within the interior of a receptacle when the pressure within the interior of the receptacle exceeds a specific level or threshold. Thus, the valve assembly 100 of the present invention may be designed to be able

to withstand a certain amount of internal positive pressure before it becomes necessary to release gas/fluid there through. For example, generally when the internal pressure exceeds atmospheric pressure from about 689 pascals (Pa) to about 103421 Pa, the valve assembly **100** of the present invention may release internal pressure from a receptacle's interior. However, the present invention contemplates that the valve assembly **100** may be designed to respond and release gasses into the outside environment at variable amounts of pressure that are less than or significantly greater than about 689 Pa to about 103421 Pa wherein the variable amounts of pressure are dependent upon product design or requirements.

[0040] FIG. 3 illustrates a method of constructing a plurality of bi-layer pre-oil valve assemblies **100** of the present invention. First, a release liner **210** may be provided such that a plurality of valve assemblies **100** may be aligned thereon, such as in columns. The components of the assemblies **100** may be generally constructed and include the base layer **110** having an aperture **130** and a perimeter, a layer of adhesive (not shown in FIG. 3) and a fluid or oil layer **170**. A plurality of valve assemblies **100** on a release liner **210** or web may be constructed thereon for individual utilization.

[0041] The present invention also includes a method of constructing the bi-layer pre-oiled fluid valve assembly **100** of the present invention. The method includes providing the base layer **110** having a perimeter defined by the first edge **132** with the opposite second edge **134** and the third edge **136** with the opposite fourth edge **138**, the third and fourth edges **136**, **138** may be spaced between the first and second edges **132**, **134**. However, the base layer **110** does not necessarily require a geometric shape having four sides as this disclosure contemplates a base layer **100** having more than four edges or less than four edges and is not limited. At least one opening **130** may be cut in the base layer **110**. The base layer **110** may be attached to a web or release liner **210**. A first layer of adhesive (not shown) may be applied on the release liner and the base layer **110** may be placed on top of the first adhesive layer.

[0042] A discontinuous layer of adhesive **150** may be applied adjacent the first and second edges **132**, **134** of the base layer **110** wherein a non-adhesive portion **160** extends about the aperture **130** of the base layer **110** and between the adhesive **150** along the first and second edges **132**, **134**. The non-adhesive portion **160** may extend from the third edge **136** to the fourth edge **138**. A discontinuous fluid layer **170** may be applied within the area of the non-adhesive portion **160** of the base layer. The material layer **140** may be provided over the adhesive layer **150** and the fluid layer **170**. The term "pre-oil" refers to the fact that the fluid layer **170** may be provided along the base layer **110** prior to the application of the material layer **140**. The fluid layer **170** may be printed or otherwise applied prior to the addition of the material layer **140**.

[0043] The base layer **110** and material layer **140** may be configured to allow for the expulsion of gas from the interior of the receptacle **120** when the bi-layer pre-oiled valve assembly **100** is attached to the receptacle **120**. The bi-layer pre-oiled valve assembly **100** forms the channel **190** or outgassing path through the aperture **130** and fluid layer **170** below the material layer **140** defined by the pattern of adhesive **150** and the non-adhesive portion **160**.

[0044] The present invention contemplates that the valve assemblies of the present invention may be constructed on a

web that may be wound in rolls. It is also contemplated that the valve assemblies of the present invention may be provided on individual sheets, or in a cut sheet format rather than rolls.

[0045] It will thus be seen according to the present invention a pre-oiled valve has been provided. While the invention has been described in connection with what is presently considered to be the most practical and preferred embodiment, it will be apparent to those of ordinary skill in the art that the invention is not to be limited to the disclosed embodiment, and that many modifications and equivalent arrangements may be made thereof within the scope of the invention, which scope is to be accorded the broadest interpretation of the appended claims so as to encompass all equivalent structures and products.

[0046] Although the embodiments of the present teachings have been illustrated in the accompanying drawings and described in the foregoing detailed description, it is to be understood that the present teachings are not to be limited to just the embodiments disclosed, but that the present teachings described herein are capable of numerous rearrangements, modifications and substitutions without departing from the scope of the claims hereafter. The claims as follows are intended to include all modifications and alterations insofar as they come within the scope of the claims or the equivalent thereof

1. A pre-oil valve assembly comprising:
 - a base layer having a top surface, a bottom surface and defining a perimeter, the base layer having at least one aperture;
 - a layer of adhesive provided along a first edge and an opposite second edge of the base layer;
 - a non-adhesive portion along a top surface of the base layer;
 - a discontinuous fluid layer provided within the perimeter of the base layer along a portion of the non-adhesive portion;
 - a material layer provided over the discontinuous fluid layer and adhesive layer;
 wherein the base layer, layer of adhesive, and material layer define a channel configured to allow fluid to travel through the aperture and fluid layer.
2. The pre-oil valve assembly as set forth in claim 1, wherein the fluid layer of is a low viscosity fluid.
3. The pre-oil valve assembly of claim 1, wherein the fluid layer is one of a silicone oil, vegetable oil, and mineral oil.
4. The pre-oil valve assembly of claim 1, wherein the base layer is PET.
5. The pre-oil valve assembly of claim 1, wherein the material layer is PET.
6. The pre-oil valve assembly of claim 1, wherein the assembly is a one-way valve.
7. The pre-oil valve assembly of claim 1, wherein the valve assembly is configured to be adhered to a receptacle.
8. The pre-oil valve assembly of claim 1, wherein the perimeter of the base layer is defined by a first edge and an opposite second edge and a third edge and an opposite fourth edge wherein the third edge and fourth edge extend between the first edge and the second edge.
9. The pre-oil valve assembly of claim 8, wherein the adhesive layer includes a first portion applied along the first edge and a second portion applied along the opposite second edge, the first portion is spaced from the second portion and at least partially defines the channel therebetween.

10. The pre-oil valve assembly of claim **1** further comprising:

a pair of rails positioned along the material layer.

11. A pre-oil valve assembly comprising:

a base layer having a top surface and a bottom surface, the base layer defining an opening that is configured to be aligned with an opening of a receptacle;

an adhesive layer disposed on the top surface of the base layer, the adhesive layer provided in a discontinuous pattern about the top surface of the base layer that at least partially defines the channel;

a fluid layer disposed on the base layer, the fluid layer being disposed in an area not covered by the adhesive layer;

a material layer overlying the adhesive layer and the fluid layer; and

at least one rail member positioned along the material layer.

12. The pre-oil valve assembly of claim **11**, wherein a perimeter of the base layer is defined by a first edge and an opposite second edge and a third edge and an opposite fourth edge wherein the third edge and fourth edge extend between the first edge and the second edge.

13. The pre-oil valve assembly of claim **12**, wherein the adhesive layer includes a first portion and a second portion, the first portion spaced from the second portion along opposite sides of the aperture.

14. A method of constructing a bi-layer pre-oil valve assembly, the method comprising:

providing a base layer having a perimeter defined by first edge with an opposite second edge and a third edge with an opposite fourth edge, the third and fourth edges spaced between the first and second edges;

providing at least one aperture in the base layer;

applying an adhesive layer having a first portion adjacent the first edge of the base layer and a second portion adjacent a second edge of the base layer wherein the first portion and second portion of the adhesive layer define a non-adhesive portion that generally circumscribes the aperture of the base layer;

applying a fluid layer within the area of the non-adhesive portion of the base layer;

attaching a material layer to the adhesive layer and over the fluid layer wherein an outgassing path is formed through the aperture and fluid layer below the material layer.

15. The method of claim **14**, further comprising:

providing a release liner;

applying a first adhesive layer on the release liner; and

providing a plurality of base layers on the release liner wherein a plurality of bi-layer pre-oil valves are assembled on the release liner.

16. The method of claim **14**, further comprising:

attaching the bi-layer pre-oil valve to a receptacle wherein the base layer and material layer allow for the expulsion of gases from an interior of a receptacle.

17. The method of claim **14**, wherein the first and second adhesive portions extend from the third edge to the fourth edge and the non-adhesive portion extends from the third edge to the fourth edge.

18. The method of claim **14**, wherein the fluid layer is provided along the base layer prior to the application of the material layer.

19. The method of claim **14**, wherein the fluid layer is printed along the base layer prior to the application of the material layer.

20. The method of claim **14**, further comprising:

attaching at least one rail to the material layer.

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