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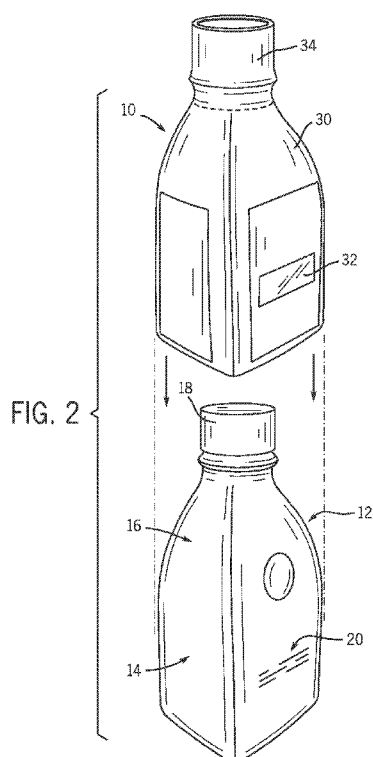
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[Continued on next page]

(54) Title: TAMPER EVIDENT PACKAGING AND METHOD OF FORMING THE SAME



(57) Abstract: In a tamper evident packaging and method of forming such packaging, indicia (20) is disposed on the outer surface of a container (12), a cover member (30), separate from the indicia, is disposed on the container and covers at least a portion of the indicia. The covered portion of the indicia is visible through the cover member. The cover member is applied to the container such that the cover member inhibits access to the indicia without at least one of visible destruction of the cover member and removing the cover member from the container.



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TAMPER EVIDENT PACKAGING AND METHOD OF FORMING THE SAME

FIELD OF THE DISCLOSURE

[0001] The present disclosure relates generally to tamper evident packaging and a method of forming such packaging, and more particularly to such packaging in which tampering of indicia on the packaging is inhibited.

BACKGROUND OF THE DISCLOSURE

[0002] Various techniques have been used to provide purchasers/consumers with the ability to assess whether a packaged product may have been tampered with. For example, currently known techniques include applying a removable covering to the lid of a container, providing the lid of a container with a break away seal, and/or providing a seal over the mouth of the container. Such tamper evidence techniques, however, are particularly suitable for determining whether the package has been opened. However, there are other aspects of the packaging for which tampering is a concern but are largely unaddressed by currently use techniques.

[0003] Indicia, for example, is commonly provided on packaging and may include the expiration date, the date of manufacture, a use-by date, a manufacturing location, a lot number, certification symbols and trademarks or information indicative of the contents of the product or the source thereof. For containers, such as plastic containers, this information is commonly applied directly to the container by an inkjet printer. Alternatively, this information may be applied to the container on a label secured to the container.

[0004] This information is vital to customers, retailers and manufacturers. Customers rely upon this information to determine whether to purchase the product and when to dispose of the product. Retailers rely upon this information to determine when to remove product from their shelves or

return the unused product to the manufacturer. Manufacturers rely upon this information to identify product that must be recalled.

[0005] There is a risk, however, that such information may be altered on the packaging without the knowledge of the customer, retailer and/or manufacturer. For example, there is concern that an expiration date or use-by-date may be altered or removed from the packaging. This is especially so for relatively high-cost products such as nutritional products and infant formulas. To remove information that is imprinted directly on a plastic container, for example, one may simply use an alcohol swab to remove the information and then reapply new information. In the event that the information is applied using an adhesive label, the label may simply be pulled off or a new label affixed over the original label.

[0006] There is a need, therefore, for a solution to inhibit tampering with important information on packaging and to provide evidence of such tampering should it occur.

SUMMARY OF THE DISCLOSURE

[0007] In one embodiment, a tamper evident packaging generally comprises a container and indicia disposed on the container. A cover member, separate from the indicia, is disposed on the container and covers at least a portion of the indicia. The covered portion of the indicia is visible through the cover member. The cover member is applied to the container such that the cover member inhibits access to the indicia without at least one of visible destruction of the cover member and removing the cover member from the container.

[0008] In another embodiment, a tamper evident packaging comprising generally comprises a container and a cover member separate from and disposed on the container. The cover member has a container-facing surface and an outer surface facing away from the container. Indicia is in contact with the container-facing surface of the cover member and out of

contact with the outer surface of the cover member such that the cover member inhibits access to the indicia without at least one of visible destruction of the cover member and removing the cover member from the container. The indicia is visible through the cover member.

[0009] In one embodiment, a system for identifying tampering of a packaging generally comprises indicia to be applied to the packaging, the indicia being indicative of at least one characteristic of the contents of the packaging. A cover member is positionable on the packaging over the indicia, with the cover member and indicia being configured relative to each other such that the indicia is visible through the cover member when both the indicia and the cover member are disposed on the packaging. The cover member is applicable to the container such that the cover member inhibits access to the indicia without at least one of visible destruction of the cover member and removing the cover member from the container.

[0010] In one embodiment of a method of forming a tamper evident packaging, indicia is applied to the outer surface of a container. A cover member is applied to the container over at least a portion of the indicia, with application of the cover member to the container being such that the cover member inhibits access to the indicia without at least one of visible destruction of the cover member and removing the cover member from the container. The indicia and the cover member are configured relative to each other such that the indicia is visible through the outer cover.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] Figure 1 is a front perspective view of a tamper evident package.

[0012] Figure 2 is an exploded front perspective view of a tamper evident package.

DETAILED DESCRIPTION OF THE DISCLOSURE

[0013] Referring now to the drawings and in particular to Figs. 1-2, one embodiment of a suitable tamper evident packaging is generally indicated at 10. The illustrated packaging generally comprises a container in the form of a bottle 12 configured for holding a quantity of flowable product and having a recloseable cap, generally indicated at 18, broadly defining a closure for the packaging. The flowable product may, for example, include without limitation nutritional or medical product for adult or pediatric nutrition, including but not limited to the following: fat; protein; carbohydrates; minerals; vitamins; probiotics; prebiotics; nutrients; compounds or concentrates that aid in digestion, nutrition, or improvement of physical health; complete or modular nutrition that aids in metabolism or alters how metabolism occurs; and other dietary supplements. The bottle 12 may be aseptically or terminally sterilized.

[0014] The illustrated bottle 12 suitably comprises a body 14 and a neck 16. The bottle 12 may in one embodiment have a volume of about 1 ml to about 2000 ml, or more suitably about 500 – 1000 ml. The body 14 of the illustrated bottle 12 is generally polygonal in cross-section, and more particularly it is generally rectangular. The neck 16 has an inward taper to external threads to which the cap 18 is attached. It is understood that the bottle 12 may be other than polygonal in cross-section, such as a circular cross-section, without departing from the scope of the present disclosure. It is also understood that the bottle may be of other general shapes and/or sizes without departing from the scope of the present disclosure. In one embodiment the bottle 12 (i.e., the container) is suitably at least in part and more suitably entirely opaque. However, it is understood that the container may instead be other than opaque, such as translucent or transparent, without departing from the scope of this disclosure.

[0015] In one embodiment, the bottle 12 may be suitably formed as a one-piece component (e.g., other than the recloseable cap 18), such as by molding. Suitable materials from which the bottle 12 and/or cap 18 may be formed include, without limitation, polyethylene terephthalate (PETE), high density polyethylene (HDPE), low density polyethylene (LDPE), polyvinyl chloride (PVC), polypropylene, polystyrene (PS), and polycarbonates. It is understood, however, that the bottle 12 may be formed in other suitable ways and from other suitable materials. It is also understood that while the illustrated container is in the form of a bottle 12, the packaging container may be of any suitable form for containing product, such as a box or other suitable container.

[0016] With continued reference to the bottle 12 (broadly, a container) of Figs. 1 and 2, the packaging further comprises indicia 20 disposed on (e.g., applied to) the bottle 12. In the illustrated embodiment the indicia is disposed on an outer surface of the body 14 of the bottle, and in particular on the side thereof. It is contemplated, however, that the indicia may be disposed on the outer surface of the bottom of the bottle 12, or somewhere on the neck 16 and/or on the cap 18, and remain within the scope of the present disclosure. In one particularly suitable embodiment, the indicia is indicative of at least one characteristic of the product contained in the bottle 12. For example, the indicia may suitably comprise, without limitation, an expiration date, a manufacture date, a use-by date, a location of manufacture, a lot number or other suitable information. In such an embodiment, the indicia is generally alphanumeric (e.g., text). It is understood, however, that the indicia may be a graphic, a pictorial, an image, or other suitable non-alphanumeric indicia, alone or in combination with alphanumerics. Examples of other suitable indicia include, without limitation, certification symbols or seals, trademarks, manufacturer name/address, distributor name/address, barcode or other indicia that generally relates to the packaged product in some manner to uniquely identify the source or at least one characteristic of the packaged product.

[0017] In accordance with one embodiment, the indicia 20 may be suitably applied to the bottle (i.e., the container) 12 using an ink jet printer, contact printer or other suitable printing device. The ink used for such applications is typically alcohol based but may alternatively be water based. It is understood that in other embodiments the indicia 20 may be applied in other suitable ways and from other suitable materials. For example, in some embodiments the indicia may be etched, engraved or otherwise formed into the outer surface of the bottle 12 (and/or cap 18). In other embodiments, the indicia 20 may be applied to a label (not shown) or other suitable substrate (not shown) that is secured to the bottle 12 (and/or cap 18).

[0018] As best illustrated in Fig. 2, the packaging 10 further comprises a cover member 30 that is disposed on the bottle (i.e., the container) 12 and at least in part covers the indicia 20. In the illustrated embodiment, the cover member 30 suitably comprises a label that is separate from the bottle 12 and the indicia 20. The illustrated label 30 is fit onto and covers the outer surface of substantially the entire side of the body 14 of the bottle 12, and more suitably the outer surface of the neck 16 and side of the cap 18. For example, in one particularly suitable embodiment the label 30 comprises a shrink-wrap or shrink-label 30. Shrink-labeling consists of enveloping a part of the container in a thermoplastic tube-like sleeve, the sleeve being heated to shrink and fit snug onto the container. Additionally, the shrink label 30 has a detachable tamper proof upper section 34 that surrounds the cap and is detached from the rest of the label prior to or along with initial removal of the cap 18 from the bottle 12.

[0019] The shrink-label 30 may be comprised of any material known for such purposes. Typical thermoplastic materials used for shrink-labeling include polyvinylchloride (PVC), low or high density polyethylene (LDPE, HDPE), polyethylene terephthalate (PET), polypropylene (PP) and oriented polypropylene (OPP), polystyrene (PS) and oriented polystyrene (OPS), and combinations thereof.

[0020] In alternative embodiments, the cover member 30 may suitably comprise a sleeve, a film material, a sticker or other suitable substrate. In a particularly suitable embodiment, the cover member 30 is configured such that it cannot be removed, in whole or in part, from the bottle 12 (i.e., the container) without visible destruction (e.g., tearing, scratching, cutting, removal, etc.) of the cover member. Such visible destruction is thus an indicator to a purchaser/consumer that the packaging 10 has been tampered with.

[0021] In one suitable embodiment, the cover member 30 covers at least about 40% of the outer surface of the container 12 in order to provide for a sufficient container surface for applying indicia while ensuring adequate coverage by the cover member over the indicia. More suitably, the cover member 30 covers at least about 60% of the outer surface of the container 12, even more typically it covers at least about 75%, and still more suitably it covers at least about 90% of the outer surface of the container 12. It should be understood the "outer surface of the container" hereby comprises the whole outer surface, including the outer surface of the base (i.e., the bottom of the container). It is understood, however, that in other embodiments the cover member 30 may be sized only sufficient to cover a portion of the indicia, and in other embodiments only sufficient to cover the entire indicia. In such embodiments this may comprise coverage of the outer surface of the container 12 by the cover member 30 of less than about 40%.

[0022] The cover member 30 (i.e., in the illustrated embodiment, the shrink-label) suitably has an inner, or container-facing surface and an outer surface. Thus, it will be understood that the inner surface of the portion of the cover member 30 that covers the indicia 20 is generally in contact with the indicia, while the outer surface is not. In this manner, direct access to the indicia 20 is inhibited by the cover member 30 without the cover member being subjected to visible destruction. That is, the indicia 20 cannot be tampered with without visible evidence of the cover member having been tampered with. While in the illustrated embodiment the indicia 20 is separate

from the cover member 30, such as by being applied to the container (either directly or by a substrate as discussed above), it is contemplated that in other embodiments (not shown) the indicia may be applied to the inner, container-facing surface of the cover member 30 so that when the cover member is placed on the container the indicia is disposed between the container and the outer surface of the cover member – i.e., it is still not accessible without damaging or removing the cover member.

[0023] In one suitable embodiment, the indicia 20 and/or the cover member 30 are configured such that the indicia is visible through the portion of the cover member that covers the indicia. The term “visible” as used herein means being visible to a human, unaided eye in normal lighting conditions when viewing the packaging generally at arms-length. For example, in one particularly suitable embodiment a portion 32 of the cover member 30 that covers the indicia 20 is transparent. In such an embodiment, other portions of the cover member 30 may be colored and/or opaque and/or have designs, patterns, graphics, images and/or other indicia thereon as part of the overall packaging 10. This allows the purchaser/consumer to still view the indicia 20 through the cover member 30, while providing confidence that the indicia has not been tampered with.

[0024] In other embodiments, the portion 32 of the cover member 30 covering the indicia 20 may be other than transparent, such as generally translucent, with the indicia being sufficiently configured (e.g., sized and/or colored) so as to be visible through the cover member. The translucence may be a result of a reduced color density of the cover member 30, a different and more suitably a lighter color, a thinning of the cover member at the relevant portion thereof, or other suitable technique to render the cover member translucent at the portion that covers the indicia.

[0025] In other embodiments, the indicia 20 itself may be applied sufficiently large and/or dark so as to be readily seen through the cover member 30 and remain within the scope of this disclosure.

[0026] As seen best in Figure 2, in one embodiment of a method of forming a tamper evident package, indicia 20 is applied to the outer surface of a container 12. The cover member 30 is applied to the container over at least a portion of the indicia. For example, in the illustrated embodiment the shrink-label is fitted over the container (or the container is received into the shrink-label). The application of the cover member to the container is such that the cover member inhibits access to the indicia without at least one of visible destruction of the cover member and removing the cover member from the container. For example, heat-shrinking the shrink-label tightens the label on the container such that the label cannot be readily removed from the container without permanently stretching and/or tearing the label. A portion of the cover member 30 (e.g., a transparent or translucent portion thereof) is aligned with the indicia 20 on the container such that the indicia is visible through the outer cover.

[0027] As various changes could be made in the above constructions and methods without departing from the scope of the invention, it is intended that all matter contained in the above description and shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

[0028] When introducing elements of the present invention or the preferred embodiment(s) thereof, the articles "a", "an", "the" and "said" are intended to mean that there are one or more of the elements. The terms "comprising", "including" and "having" are intended to be inclusive and mean that there may be additional elements other than the listed elements.

WHAT IS CLAIMED IS:

1. A tamper evident packaging comprising:

a container;

indicia disposed on the container; and

a cover member separate from the indicia, the cover member being disposed on the container and covering at least a portion of said indicia, said portion of the indicia being visible through said cover member, the cover member being applied to the container such that the cover member inhibits access to the indicia without at least one of visible destruction of the cover member and removing the cover member from the container.

2. The packaging set forth in claim 1 wherein the indicia comprises a first indicia, the packaging further comprising second indicia disposed on the cover member.

3. The packaging set forth in claim 1 wherein at least a portion of the cover member covering said indicia is transparent.

4. The packaging set forth in claim 1 wherein at least a portion of the cover member covering said indicia is translucent, the indicia being configured to be viewable through the translucent portion of the cover member.

5. The packaging set forth in claim 1 wherein the indicia is indicative of at least one characteristic of the contents of the container.

6. The packaging set forth in claim 1 wherein the indicia is imprinted on the container.

7. The packaging set forth in claim 1 further comprising a substrate separate from the cover member and applied to the container, the indicia being disposed on said substrate, the cover member being disposed on the

container and covering at least a portion of said indicia, said portion of the indicia being visible through said cover member.

8. The packaging set forth in claim 1 wherein the cover member comprises one of a sleeve, a shrink label, a sheet material, a label and a sticker.

9. The packaging set forth in claim 1 wherein the cover member is configured for circumscribing the container along at least a portion of a length of the container, at least a portion of the cover member covering said indicia.

10. A tamper evident packaging comprising:

a container;

a cover member separate from and disposed on the container, the cover member having a container-facing surface and an outer surface facing away from the container; and

indicia in contact with the container-facing surface of the cover member and out of contact with the outer surface of said cover member such that the cover member inhibits access to the indicia without at least one of visible destruction of the cover member and removing the cover member from the container, the indicia being visible through the cover member.

11. The packaging set forth in claim 10 wherein the indicia is separate from the cover member.

12. The packaging set forth in claim 10 wherein the indicia is applied to the container.

13. The packaging set forth in claim 10 further comprising a substrate separate from the cover member and applied to the container, the indicia being disposed on said substrate, the cover member being disposed on the container and covering at least a portion of said indicia, said portion of the indicia being visible through said cover member.

14. A system for identifying tampering of a packaging, the system comprising:

indicia to be applied to the packaging, said indicia being indicative of at least one characteristic of the contents of the packaging; and

a cover member positionable on the packaging over the indicia, the cover member and indicia being configured relative to each other such that the indicia is visible through the cover member when both the indicia and the cover member are disposed on the packaging, the cover member being applicable to the container such that the cover member inhibits access to the indicia without at least one of visible destruction of the cover member and removing the cover member from the container.

15. A method of forming a tamper evident packaging the method comprising:

applying indicia to the outer surface of a container;

applying a cover member to the container over at least a portion of the indicia, application of the cover member to the container being such that the cover member inhibits access to the indicia without at least one of visible destruction of the cover member and removing the cover member from the container, the indicia and the cover member being configured relative to each other such that the indicia is visible through the outer cover.

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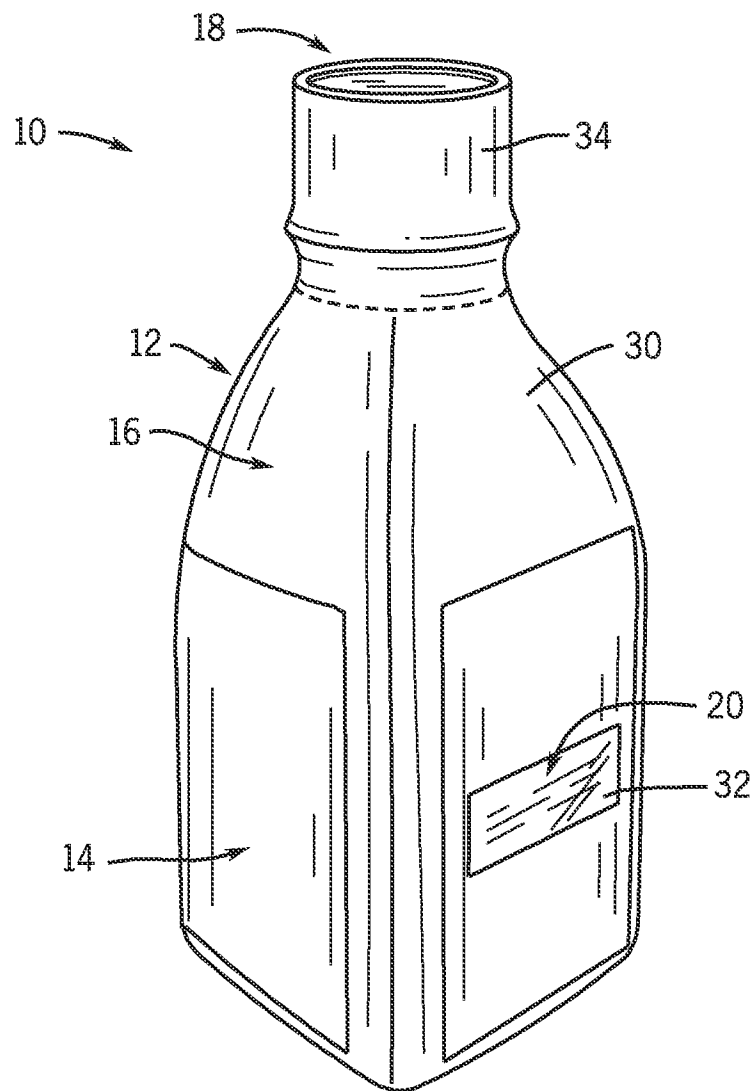
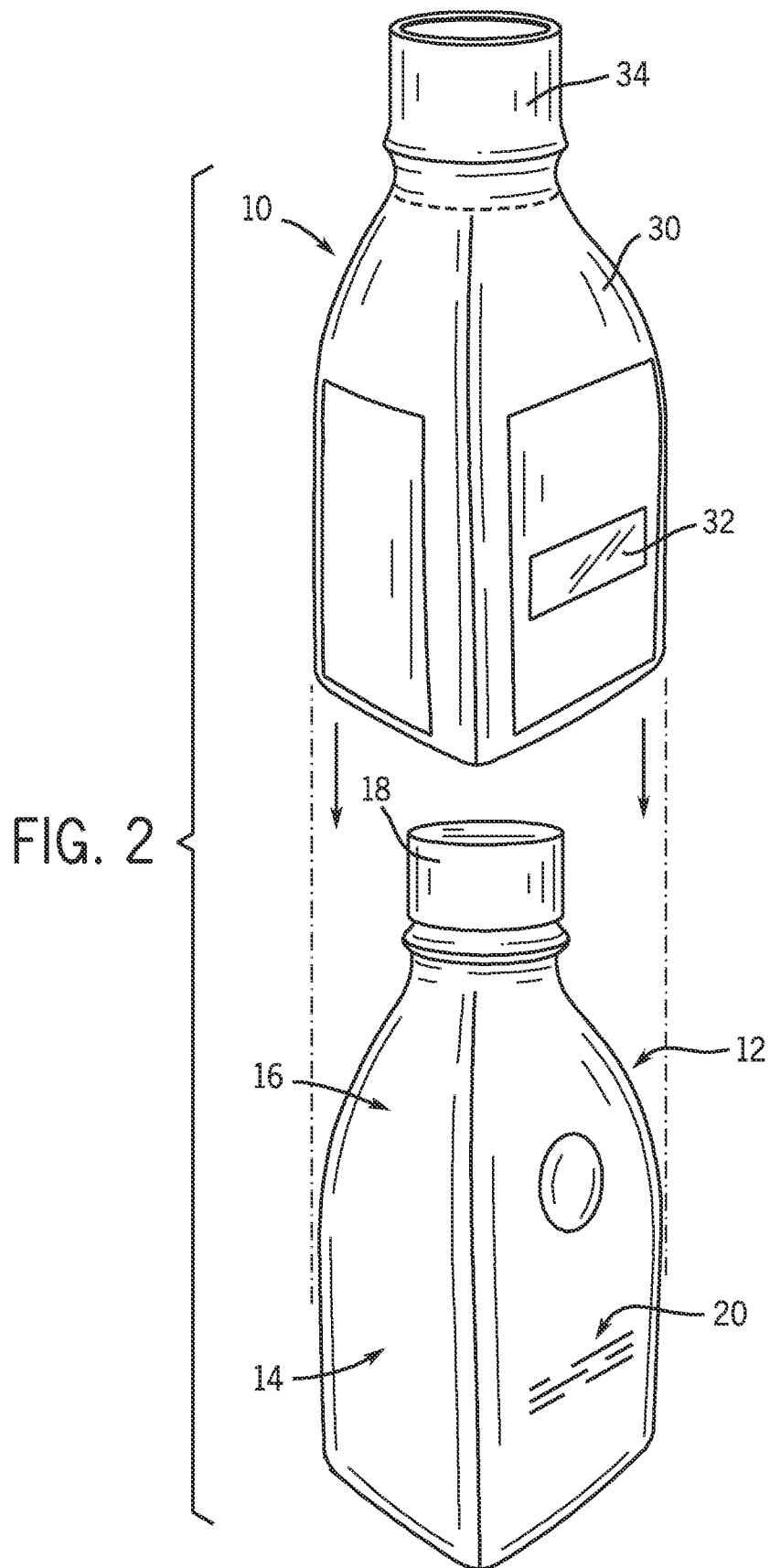


FIG. 1

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2011/045005

A. CLASSIFICATION OF SUBJECT MATTER
INV. B65D23/08
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2 166 513 A (WATERS HARRY F) 18 July 1939 (1939-07-18)	1-5,7-15
Y	page 1, left-hand column, line 19 - line 27 page 1, left-hand column, line 52 - right-hand column, line 2 page 1, right-hand column, line 43 - page 2, left-hand column, line 27 page 2, left-hand column, line 35 - line 43; figure 1 ----- -/--	6



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

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"O" document referring to an oral disclosure, use, exhibition or other means

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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

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Date of the actual completion of the international search

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21/10/2011

Name and mailing address of the ISA/

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Bridault, Alain

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2011/045005

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	"PERFORATED SHRINK LABEL MATERIALS FOR TAMPER EVIDENCE PACKAGING AND COUPONING", RESEARCH DISCLOSURE, MASON PUBLICATIONS, HAMPSHIRE, GB, no. 355, 1 November 1993 (1993-11-01), page 724, XP000421343, ISSN: 0374-4353 Description of the conventional system -----	1,5,7-15
X	FR 2 508 001 A1 (LUMBRES PAPETERIES CARTONNERIE [FR]) 24 December 1982 (1982-12-24) page 2, line 29 - line 35 page 6, line 20 - line 32; figure 4 -----	1,3-5, 7-15
Y	GB 1 062 682 A (DUBUIT LOUIS GILBERT) 22 March 1967 (1967-03-22) page 1, line 13 - line 18 -----	6

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2011/045005

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			DE 8217987 U1	16-09-1982
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