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(54) Benævnelse: **Manipulationssikker blisterpakning**

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DESCRIPTION

Description

FIELD

[0001] The present disclosure relates to a tamper evident blister package and methods thereof.

BACKGROUND

[0002] Conventional packaging of products such as food items and drug products likely to be ingested by consumers has involved considerations such as preventing physical damage to the product or maintaining the product free of bacterial, chemical or microbial contamination. More recently, manufacturers of packaged products have also taken into account the possibility that their product may be deliberately interfered with by a third party. Tampering with products is a concern for all goods manufacturers because of the effect such tampering may have on product performance and therefore the reputation and good name of the manufacturer as well as possibly injuring those using the tampered products. The problems faced by those in the food and drug industries, where the products are ingested are particularly acute. Contamination of food and drug products with dangerous materials can have severe consequences.

[0003] It is therefore desirable for the retailer, the consumer and the manufacturer to have a method of determining whether or not a package has been altered. In such cases, the product can be rejected to thereby reduce the likelihood of consumption of a product that has been tampered with.

[0004] One such conventional method is disclosed in EP0162378 assigned to Intini. Intini concerns a tamper evident package with a blister pack that is sealed between a front layer and a back layer through apertures created through the blister pack. In other words, apertures are formed through the blister pack to allow front/back layers to bond to each other.

[0005] FR-A-1527556 describes a package consisting of a container with one or more compartments formed from a sheet.

[0006] EP-A-2336045 discloses a tablet dispenser box having a front face provided with cut outs.

[0007] Despite such conventional packaging methods, the fact remains that the malicious interference with products still occurs and can result in huge losses, e.g., in lost sales, as well as, consumer confidence.

[0008] The invention is therefore directed at a packaging system and method that provides a visual indication of product opening and, therefore of product tampering. The packaging system and method of the present invention is adaptable for use in a variety of environments and may be incorporated into a number of existing packaging apparatuses with minimum effort.

BRIEF SUMMARY

[0009] According to an embodiment, a tamper evident blister package is provided comprising a blister assembly defining at least one cavity, the opening of the at least one cavity being at least partially closed by a membrane. Further, a sleeve housing the blister assembly is provided, the sleeve having a top side and a bottom side, the bottom side having a contact window that is aligned with the cavity. Further, a package integrity feature is applied to the bottom side and covers the contact window. The package integrity feature is further applied to the membrane covering the cavity through the contact window.

[0010] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the package integrity feature is a pressure sensitive adhesive.

[0011] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the package integrity feature prevents lateral removal of the blister assembly from the sleeve.

[0012] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the package integrity feature is perforated and circumferentially outlines the contact window of the sleeve.

[0013] In addition to one or more of the features described above, or as an alternative, in further embodiments comprising an indicia of origin or manufacture printed over the package integrity feature, and the contact window.

[0014] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the membrane is a foil, plastic or paperboard.

[0015] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the cavity contains a pellet.

[0016] In addition to one or more of the features described above, or as an alternative, in

further embodiments wherein the sleeve further comprises an access window aligned with the cavity on the top side of the sleeve for allowing pressure dispensing of the pellet through the contact window.

[0017] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the contact window is sufficiently sized to allow the pellet to pass therethrough.

[0018] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the pressure sensitive adhesive is permanent.

[0019] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the pressure sensitive adhesive includes an elastomer and a tackifier.

[0020] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the elastomer is a natural rubber, vinyl ether, acrylic, butyl rubber, styrene block copolymer, silicone or nitrile.

[0021] In addition to one or more of the features described above, or as an alternative, in further embodiments tackifier is a terpene, aromatic resin, hydrogenated hydrocarbon.

[0022] According to another embodiment, a tamper evident blister package is provided comprising a blister assembly defining at least one cavity for housing a pellet. Further, a sleeve housing the blister assembly is provided, the sleeve including a bottom side defining a contact window that is vertically aligned with the cavity. Further a package integrity feature is applied over the contact window and wherein, through the contact window, the package integrity feature is further applied to an area of the blister assembly defining the cavity.

[0023] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the package integrity feature is a pressure sensitive adhesive.

[0024] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the package integrity feature prevents lateral removal of the blister assembly from the sleeve.

[0025] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the package integrity feature is perforated and circumferentially outlines the contact window of the sleeve.

[0026] In addition to one or more of the features described above, or as an alternative, in further embodiments comprising an indicia of origin or manufacture printed over the package integrity feature, and the contact window.

[0027] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the sleeve further comprises an access window aligned with the cavity on the top side of the sleeve for allowing pressure dispensing of the pellet through the contact window.

[0028] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the pressure sensitive adhesive is permanent.

[0029] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the pressure sensitive adhesive includes an elastomer and a tackifier.

[0030] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the elastomer is a natural rubber, vinyl ether, acrylic, butyl rubber, styrene block copolymer, silicone or nitrile.

[0031] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the tackifier is a terpene, aromatic resin, hydrogenated hydrocarbon resin or terpene-phenol resin.

[0032] According to yet another embodiment, a method of manufacturing a tamper evident blister package is provided comprising the acts of providing a blister assembly defining at least one cavity, the opening of the at least one cavity being at least partially closed by a membrane. Further, housing the blister assembly in a sleeve, the sleeve having a top side and a bottom side, the bottom side having a contact window that is aligned with the cavity. Further, applying a package integrity feature applied to the bottom side and covering the contact window; and applying the package integrity feature to the membrane covering the cavity through the contact window.

[0033] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the package integrity feature is a pressure sensitive adhesive.

[0034] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the package integrity feature prevents lateral removal of the blister assembly from the sleeve.

[0035] In addition to one or more of the features described above, or as an alternative, in further embodiments comprising the act of perforating the package integrity feature and circumferentially outlining the contact window of the sleeve.

[0036] In addition to one or more of the features described above, or as an alternative, in further embodiments comprising the act of printing an indicia or origin or manufacture over the package integrity feature, and the contact window.

[0037] According to yet another embodiment, a method of manufacturing a tamper evident blister package is provided comprising the acts of providing a blister assembly defining at least one cavity for housing a pellet and housing the blister assembly in a sleeve, the sleeve including a bottom side defining a contact window that is vertically aligned with the cavity. Further, applying a package integrity feature over the contact window and wherein, through the contact window, the package integrity feature is further applied to an area of the blister assembly defining the cavity.

[0038] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the package integrity feature is a pressure sensitive adhesive.

[0039] In addition to one or more of the features described above, or as an alternative, in further embodiments wherein the package integrity feature prevents lateral removal of the blister assembly from the sleeve.

[0040] In addition to one or more of the features described above, or as an alternative, in further embodiments comprising the act of perforating the package integrity feature and circumferentially outlining the contact window of the sleeve.

[0041] In addition to one or more of the features described above, or as an alternative, in further embodiments comprising the act of printing an indicia or origin or manufacture over the package integrity feature, and the contact window

BRIEF DESCRIPTION OF THE DRAWINGS

[0042] The accompanying drawings incorporated in and forming a part of the specification embodies several aspects of the present invention and, together with the description, serve to explain the principles of the invention. In the drawings:

FIG. 1 is a plan view illustrating a front side of the tamper evident blister package according to an embodiment;

FIG. 2 is a plan view illustrating a back side of the tamper evident blister package having the pressure sensitive adhesive applied thereon along with an indicia or origin or manufacture according to an embodiment;

FIG. 3 is a plan view illustrating a back side of the tamper evident blister package in a tampered state according to an embodiment;

FIG. 4 is a plan view illustrating a front side of the tamper evident blister package with user pressure being applied to the cavity to dispense the pellet through the access window according to an embodiment;

FIG. 5 is a plan view illustrating a back side of the tamper evident blister package in a

tampered state, with the blister assembly removed from the sleeve according to an embodiment; and

FIG.6 is a side-sectional view illustrating the tamper evident blister package according to an embodiment.

DETAILED DESCRIPTION

[0043] The following disclosure will detail particular embodiments that provide improvements for tamper/integrity evident packages and methods wherein a pressure-sensitive adhesive layer is, in one embodiment, bonded to the backing material of the blister cavity and/or compartment through a contact window that is provided in the sleeve. The contact window is provided with an opening sufficient to allow any products and/or pellets in the blister cavity to be released therefrom. The pressure sensitive adhesive layer may be optionally perforated in a manner generally, vertically aligned with the contact window.

[0044] Referring now the drawings, Figs.1-5 disclose a tamper evident blister package 1, having a sleeve 3 with a top side 3A and a bottom side 3B. Package 1 houses a blister assembly 12 with a cavity 7, which contains a consumable product or pellet 9. Pellet 9 can be any one of a food product, such as chewing gum or other confectionary or pharmaceutical pill as desired. The sleeve 3 may have cut outs 13 on the bottom side 3B to allow easy reach and access to the blister assembly 12. One or more access windows 5 that allow for user interaction via digital pressure or force to dispense the pellet 9 from the cavity 7 may also be provided. User access and interaction with the pellet 9 in the blister assembly 12 may be accomplished by pressure or other means directly on the top side 3A via visual location cues, such as, indents or outline provided on the sleeve 3.

[0045] As shown in Fig. 2 and 3, contact window 21 is provided on the bottom side 3B of sleeve 3 directly over and vertically aligned with at least one of the blister cavities 7. The contact window 21 is aligned opposite access window 5 and has an opening that is sufficiently wide to allow the pellet 9 to be dispensed from the cavity 7. Once the product/pellet 9 has been packaged in the cavity 7 of the blister assembly 12, the blister assembly 12 is slidably inserted into the sleeve 3 wherein the contact window 21 vertically aligns with any one the blister cavities 7. The cavity 7 may be enclosed by a membrane or backing material 19, such as, foil, plastic or paperboard. Multiple contact windows 21 can be created in the sleeve 3 as desired.

[0046] Thereafter, a package integrity feature 15 (e.g., pressure-sensitive adhesive layer) is applied to the bottom side 3B of the sleeve 3 over the contact window 21. This adhesive layer 15 then bonds to both the sleeve 3 and the backing material 19 of the blister cavity 7 through the contact window 21, locking the sleeve 3 and the blister assembly 12 together (via the backing material 19). The adhesive layer 15 may be provided over a substantial entirety of the

bottom side 3B of sleeve 3 or more narrowly configured, e.g., only over the contact window 21. Note, that the improvements of the tamper evident package 1 of the present invention may still be accomplished by directly adhering the pressure sensitive adhesive 15 to the cavity 7 of the sleeve 3, without the use of a membrane 19 where the package of pellet 9 does not further require such use of a membrane 19. In such configuration, the adhesive layer 15 would directly bond the sleeve 3 and the blister assembly 12 together.

[0047] Further, as shown in Figs 2 and 3 below, the contact window 21 is optionally covered by some indicia of origin or manufacture 17, e.g., a UPC label. In this way, the indicia 17 would make it visually detectable if the seal had been broken and prevent the item from being purchased (i.e., could not be scanned at the register). Alternatively, indicia 17 could also contain additional features to indicate that it is made by the original manufacturer and was not a counterfeit.

[0048] Adhesive layer 15 may be formed of an elastomer and a tackifier. The elastomer may be a material such as but not limited to a natural rubber, vinyl ether, acrylic, butyl rubber, styrene block copolymer, silicone or nitrile. The tackifier may be a material such as but not limited to a terpene, aromatic resin, hydrogenated hydrocarbon resin or terpene-phenol resin. The adhesive layer 15 may be permanent or temporary.

[0049] As can be seen from Figs 4 and 5, user pressure on the access window 5 to dispense the pellet 9 through the blister cavity 7, as well as sliding/removing the blister assembly 12 would compromise the pressure-sensitive adhesive layer 15, providing indicia of tamper. As shown, the contact window 21 in the bottom side 3B of the sleeve 3 is shown, with the optional (open) perforated adhesive layer 15 that creates a cleaner appearance when accessed by user. In other words, the perforation of the adhesive layer 15 would generally outline the periphery of the contact window 21. Also, the optionally printed indicia or origin or manufacture 17 (e.g., UPC label), once broken, provides additional indications of prior tamper or access to the product/pellet 9.

[0050] Referring now to Fig. 6, there is shown a side-sectional view of the tamper evident blister package 1 of the present invention. Package 1 has a sleeve 3 with a top side 3A and a bottom side 3B, with a blister assembly 12 slidingly provided therein. The assembly 12 further includes a cavity 7 that houses a pellet 9 as desired. The sleeve 3 further provides an access window 5 that allows for user interaction via digital pressure or force to dispense the pellet 9 from the cavity 7.

[0051] Still referring to Fig. 6, contact window 21 is provided on the bottom side 3B of sleeve 3 directly over and vertically aligned with at least one of the blister cavities 7. The contact window 21 has an opening that is sufficiently wide to allow the pellet 9 to be dispensed from the cavity 7. As can be seen, the blister assembly 12 is slidably inserted into the sleeve 3 wherein the contact window 21 vertically aligns with any one the blister cavities 7. The cavity 7 may be enclosed by an optional membrane or backing material (not shown). Multiple contact windows 21 can be created in the sleeve 3 as desired.

[0052] As shown, a pressure-sensitive adhesive layer 15 is applied to the bottom side 3B of the sleeve 3 over the contact window 21. This adhesive layer 15 then bonds to both the sleeve 3 of the blister cavity 7 through the contact window 21, locking the sleeve 3 and the blister assembly 12 together. The adhesive layer 15 may be provided over a substantial entirety of the bottom side 3B of sleeve 3 or more narrowly configured, e.g., only over the contact window 21.

REFERENCES CITED IN THE DESCRIPTION

Cited references

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- EP0162378A **[0004]**
- FR1527556A **[0005]**
- EP2336045A **[0006]**

Patentkrav

1. Manipulationssikker blisterpakning (1), der omfatter:
en blisterenhed (12), der definerer mindst et hulrum (7), hvor åbningen af det mindst ene hulrum (7) i det mindste delvist er lukket af en membran (19);
et hylster (3), der rummer blisterenheden (12), hvor hylsteret (3) har en overside (3A) og en underside (3B), og undersiden (3B) har et kontaktvindue (21), der er på linje med hulrummet (7);
en pakkeintegritetsfunktion (15), der er påført undersiden (3B) og dækker kontaktvinduet (21); og
hvor pakkeintegritetsfunktionen (15) yderligere påføres membranen (19), der dækker hulrummet (7), gennem kontaktvinduet (21).

2. Pakning (1) ifølge krav 1, hvor pakkeintegritetsfunktionen (15) er et trykfølsomt klæbemiddel.

3. Pakning (1) ifølge krav 1, hvor pakkeintegritetsfunktionen (15) forhindrer lateral fjernelse af blisterenheden (12) fra hylsteret (3).

4. Pakning (1) ifølge krav 1, hvor pakkeintegritetsfunktionen (15) er perforeret og omkredser kontaktvinduet (21) af hylsteret (3).

5. Pakning (1) ifølge krav 1, yderligere omfattende en angivelse af oprindelse eller fremstilling (17), der er trykt over pakkeintegritetsfunktionen (15) og kontaktvinduet (21).

6. Pakning (1) ifølge krav 1, hvor hulrummet (7) indeholder en pille (9), og hylsteret (3) yderligere omfatter et adgangsvindue (5) på linje med hulrummet (7) på oversiden af hylsteret (3) for at tillade trykudlevering af pillen (9) gennem kontaktvinduet (21).

7. Pakning (1) ifølge krav 6, hvor kontaktvinduet (21) har en tilstrækkelig størrelse til, at pillen (9) kan passere igennem det.

8. Manipulationssikker blisterpakning (1), der omfatter:
en blisterenhed (12), der definerer mindst et hulrum (7) til at rumme en pille (9);
et hylster (3), der indeholder blisterenheden (12), hvor hylsteret (3) omfatter en underside (3B), som definerer et kontaktvindue (21), der er lodret på linje med hulrummet (7);
en pakkeintegritetsfunktion (15), der er påført over kontaktvinduet (21); og
hvor pakkeintegritetsfunktionen (15) gennem kontaktvinduet (21) yderligere påføres et område af blisterenheden (12), der definerer hulrummet (7).

9. Pakning (1) ifølge krav 8, hvor pakkeintegritetsfunktionen (15) er et trykfølsomt klæbemiddel.

10. Pakning (1) ifølge krav 8, hvor pakkeintegritetsfunktionen (15) forhindrer lateral fjernelse af blisterenheden (12) fra hylsteret (3).

11. Pakning (1) ifølge krav 8, hvor pakkeintegritetsfunktionen (15) er perforeret og omkredsafgrænser kontaktvinduet (21) af hylsteret (3).

12. Pakning (1) ifølge krav 8, yderligere omfattende en angivelse af oprindelse eller fremstilling (17), der er trykt over pakkeintegritetsfunktionen (15) og kontaktvinduet (21).

13. Pakning (1) ifølge krav 8, hvor hylsteret (3) yderligere omfatter et adgangsvindue (5) på linje med hulrummet (7) på oversiden (3A) af hylsteret (3) for at tillade trykudlevering af pillen (9) gennem kontaktvinduet (21).

14. Fremgangsmåde til fremstilling af en manipulationssikker blisterpakning (1), der omfatter:

tilvejebringelse af en blisterenhed (12), der definerer mindst et hulrum (7), hvor åbningen af det mindst ene hulrum (7) i det mindste delvist er lukket af en membran (19);

anbringelse af blisterenheden (12) i et hylster (3), hvor hylsteret (3) har en overside (3A) og en underside (3B), og hvor undersiden (3B) har et kontaktvindue (21), der er på linje med hulrummet (7);

påføring af en pakkeintegritetsfunktion (15) på undersiden (3B) og dækning af kontaktvinduet (21); og

påføring af pakkeintegritetsfunktionen (15) på membranen (19), der dækker hulrummet (7), gennem kontaktvinduet (21).

15. Fremgangsmåde ifølge krav 14, hvor pakkeintegritetsfunktionen (15) er et trykfølsomt klæbemiddel.

16. Fremgangsmåde ifølge krav 14, hvor pakkeintegritetsfunktionen (15) forhindrer lateral fjernelse af blisterenheden (12) fra hylsteret (3).

17. Fremgangsmåde ifølge krav 14, der yderligere omfatter handlingen med at perforere pakkeintegritetsfunktionen (15) og omkredsafgrænse kontaktvinduet (21) af hylsteret (3).

18. Fremgangsmåde ifølge krav 14, yderligere omfattende handlingen med at trykke en angivelse af oprindelse eller fremstilling (17) over pakkeintegritetsfunktionen (15) og kontaktvinduet (21).

19. Fremgangsmåde til fremstilling af en manipulationssikker blisterpakning (1), der omfatter:

tilvejebringelse af en blisterenhed (12), der definerer mindst et hulrum (7) til opbevaring af en pille (9);

anbringelse af blisterenheden (12) i et hylster (3), hvor hylsteret (3) har en underside (3B), som definerer et kontaktvindue (21), der er lodret på linje med hulrummet (7);

påføring af en pakkeintegritetsfunktion (15) over kontaktvinduet (21); og

hvor pakkeintegritetsfunktionen (15) gennem kontaktvinduet (21) yderligere påføres et område af blisterenheden (12), der definerer hulrummet (7).

20. Fremgangsmåde ifølge krav 19, hvor pakkeintegritetsfunktionen (15) er et trykfølsomt klæbemiddel.

21. Fremgangsmåde ifølge krav 19, hvor pakkeintegritetsfunktionen (15) forhindrer lateral fjernelse af blisterenheden (12) fra hylsteret (3).

22. Fremgangsmåde ifølge krav 19, der yderligere omfatter handlingen med at perforere pakkeintegritetsfunktionen (15) og omkredsafgrænse kontaktvinduet (21) af hylsteret (3).

23. Fremgangsmåde ifølge krav 19, yderligere omfattende handlingen med at trykke en angivelse af oprindelse eller fremstilling (17) over pakkeintegritetsfunktionen (15) og kontaktvinduet (21).

DRAWINGS

Drawing

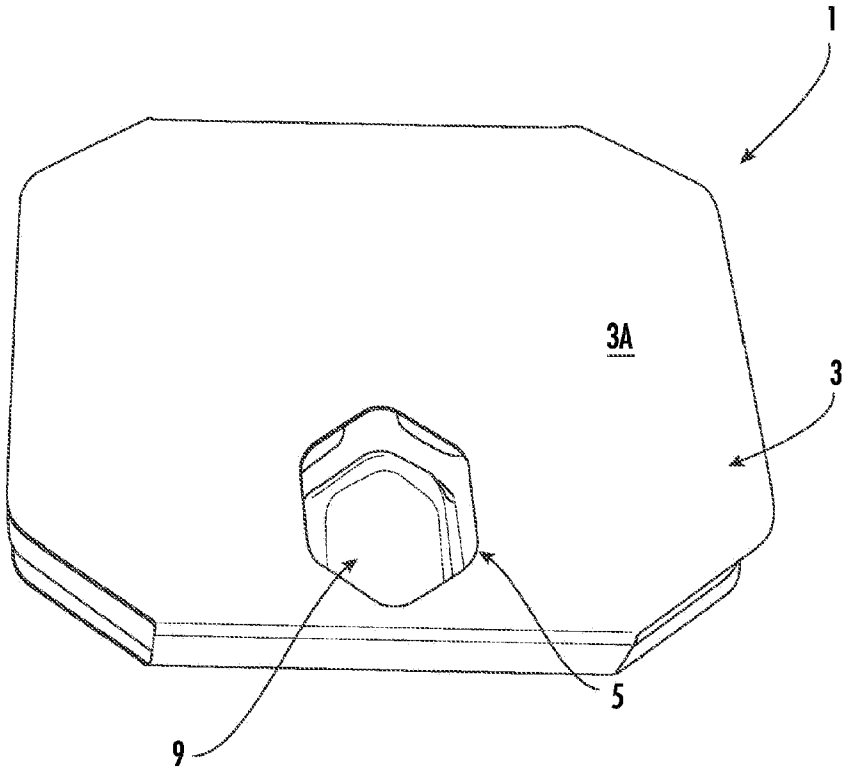

FIG. 1

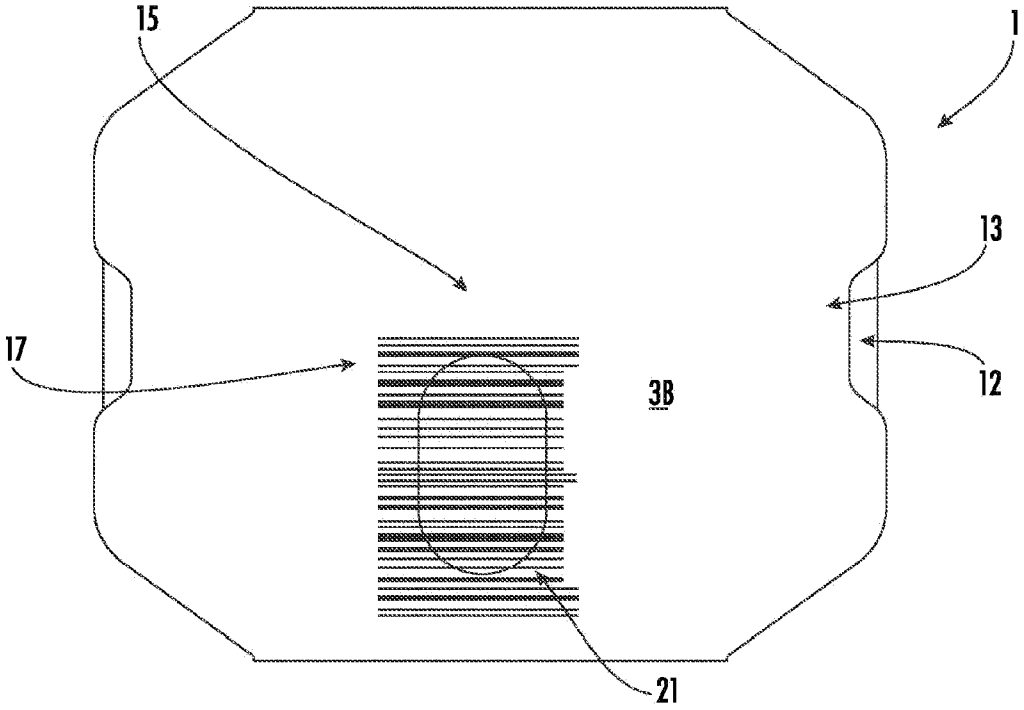

FIG. 2

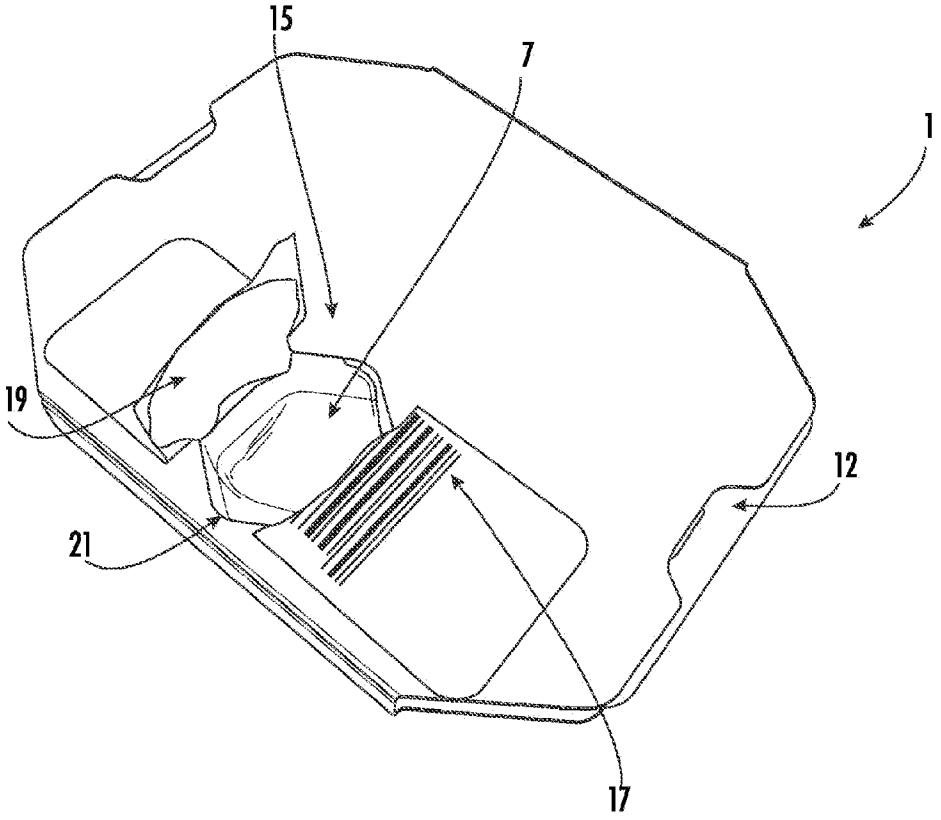

FIG. 3

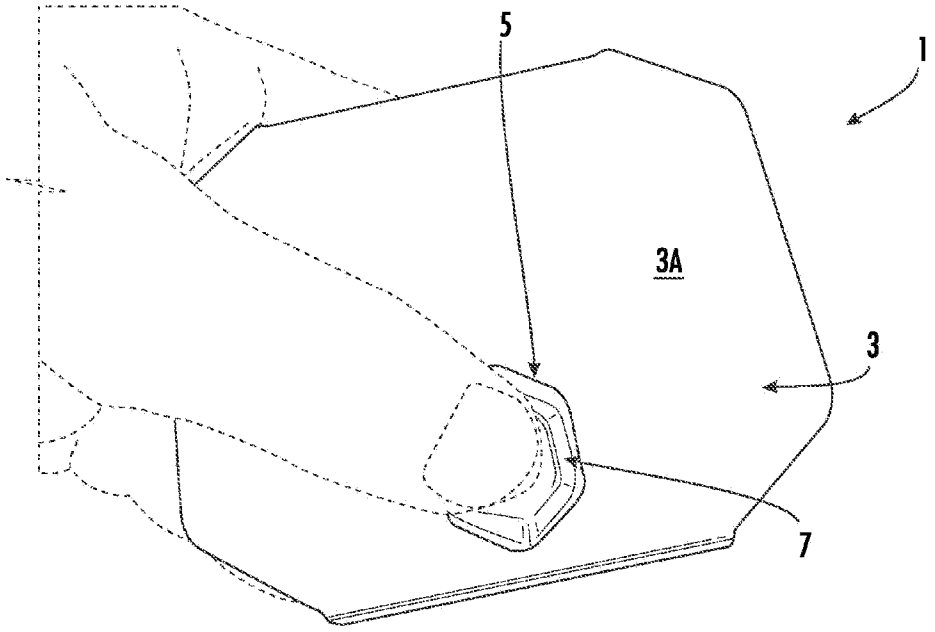

FIG. 4

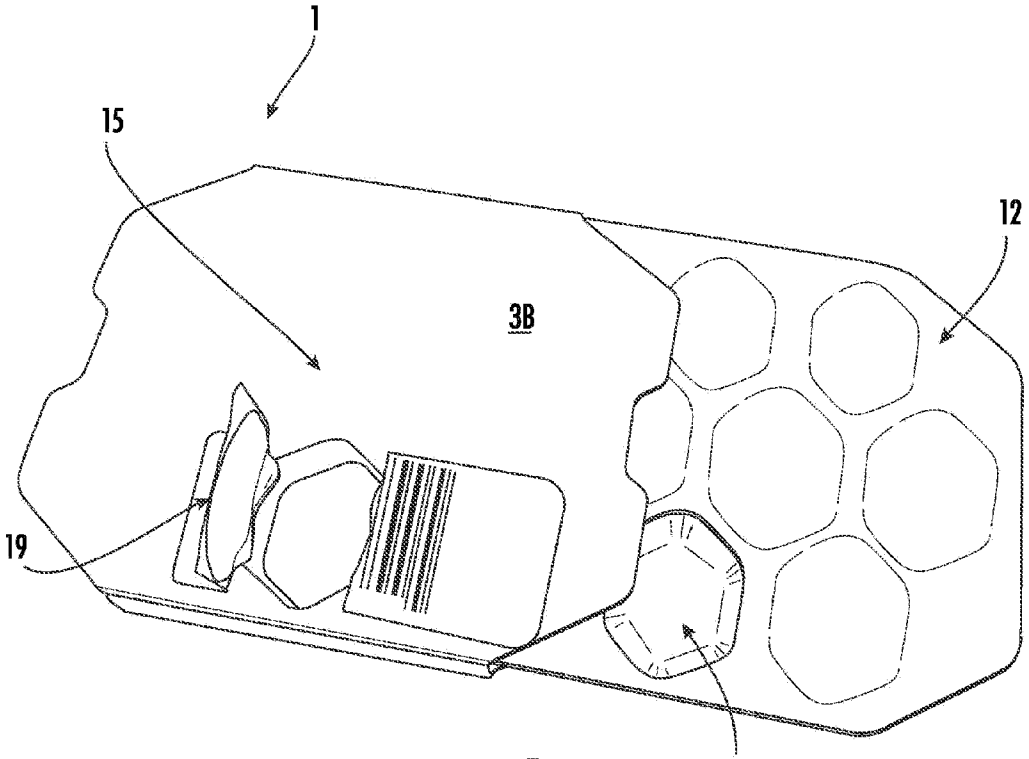

FIG. 5

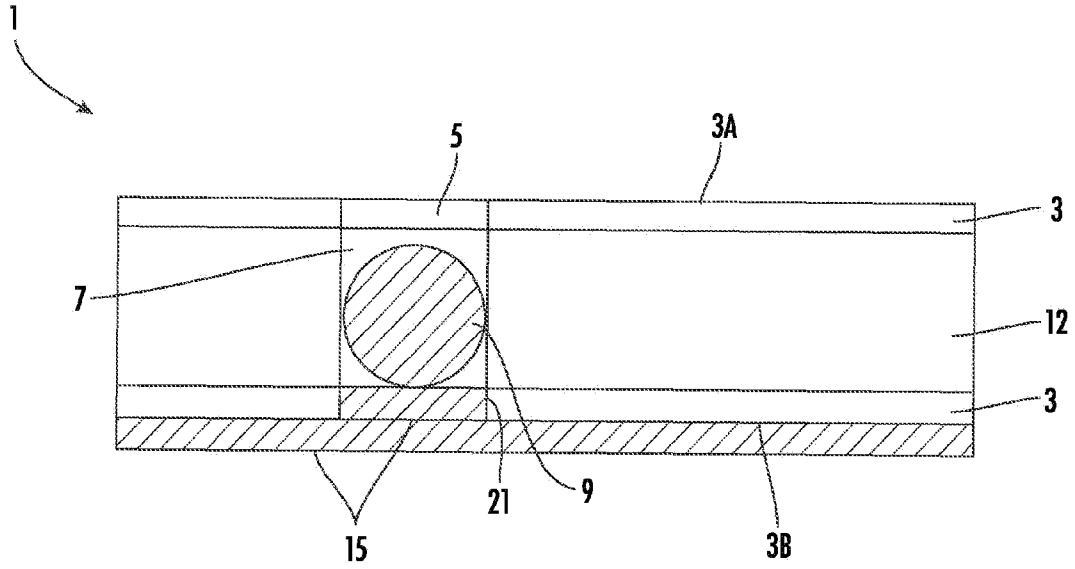

FIG. 6