ABSTRACT

A child resistant package is provided for dispensing a plurality of products. The package includes a blister pack for retaining the product. The blister pack includes a plurality of spaced recesses each of which is adapted to receive a different one of the products, and a film covering the recesses. A base including an exit opening is provided, being moveably mounted relative to the base so as to align each of the recesses, in turn, with the exit opening in the base to permit the product in the aligned recess to be dispensed through the exit opening when external force is applied to cause the product to break the film. A mechanism is provided for locking the blister pack to prevent it from moving relative to the base.
CHILD RESISTANT PACKAGE STRUCTURE

[0001] This application claims priority from U.S. Provisional Application No. 60/480,108 filed Jun. 19, 2003.

BACKGROUND OF THE INVENTION

[0002] This invention relates to a child-resistant packaging structure that allows modified blister-packs to be sealed, used and stored with safety. This invention incorporates locking and release mechanisms which rely on cognitive ability in adults and seniors. These mechanisms improve overall packaging safety against misuse by an infant, do not produce loose parts during drug access and provide superior communications with possibilities for adaptation in many drug-related categories.

[0003] Many blister packs available in the market do not provide a convenient child-proof way to access the contents of the packaging. This holds true for both solid and liquid products. Most of the previous systems or packages rely on the strength of the material used in the packaging. Others rely on disposable sections which contain safety weaknesses increasing the chance of danger to a child. Such dangers may include choking on small parts or being cut by torn foil. In addition, elderly individuals are the great number of consumers in this category and therefore child-proof systems that rely on force and not cognitive ability are doomed to fail in a senior’s hand.

SUMMARY OF THE INVENTION

[0004] In view of the above, it is a general object of the present invention to provide effective child-resistant features that use cognitive skills for removing a product from a package.

[0005] It is a further object of the invention to provide additional structural integrity that allows improved primary package tampering and crush protection.

[0006] It is another object of the invention to provide enhancements to current product packages thermo-formed blister, that work in conjunction with and can facilitate product access by adults and seniors and are inoperable by infants and young children.

[0007] Accordingly, the present invention lies in the provision of an outer rigid shell that has a specific internal geometry allowing movement of parts based on locking and unlocking on a dedicated component.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1 is an exploded view of the preferred embodiment of the present invention;

[0009] FIG. 2 is a top plan view of the preferred embodiment of the present invention;

[0010] FIG. 3 is a perspective view of the preferred embodiment of the present invention showing it during use.

DETAILED DESCRIPTION OF THE DRAWINGS

[0011] Referring to the drawings, the rigid shell can be formed from two pieces (FIG. 1—Components “1” and “2”) or be molded in one piece using an integral hinge. Prior to permanently closing and sealing components “1” and “2”, the locking interface (FIG. 1—Component “3”) is secured by fitting hole “F” of the locking interface “3” onto tab “H” of the lower component “2”. Component “4” is a clip which clips to a trigger mechanism “3” thereby locking the blister pack “5” to the trigger mechanism. Component “4” can be molded in various materials and may be molded independently or as a part of the blister pack “5” (thermoformed blister). When molded as an independent part, component “4” must be permanently attached to blister pack “5”. Triggers “G” of part “3” are used as the trigger which when squeezed towards each other move tabs “D” inward and release the hooks “C” from tabs “D” thus allowing the blister pack “5” to slide within the channel formed between the upper and lower component.

[0012] Pre-packaged or pre-sealed blister packs “5” (thermoformed or injection molded material), contents “6” (solid, powder or liquid medicine), and sealant film “7” (foil, plastic or other) are positioned and inserted by matching the side-to-side symmetric guides (FIG. 1—detail “M”) within the raised channeled walls of lower component “2”. After all components are inserted, component “1” is then sealed using various potential technologies that provides a permanent trapping of the drug’s primary packaging, blister pack “5”.

[0013] FIG. 2 shows the package assembled from the top view. Once sealed, the assembled structure provides hollow areas which are used for consumer visual, tactile and safety mechanisms interactions. As described above, triggers “G” serves as the main interaction for the blister group release (group=“4”, “5”, “6”, and “7” assembled). Spring “E” is used to apply an outward pressure to tabs “D” and when in a rest position, lock clips “C” to tabs “D”.

[0014] Once released by pressing both triggers “G”, the blister group slides by pulling on tab “N” of the blister group. This action is illustrated in FIG. 3.

[0015] The blister group travel is limited and secured by two structural components, bridge “A’ and retention tabs “J” and “L’. The bridge “A” reinforces the structure at the channel opening and prevents the blister pack from being folded along its longitudinal axis. Such folding may cause the blister pack to be removed from the channel. Bridge “A” also serves as an additional aid to force the package content to be expelled from blister. This is accomplished by pressing the center portion of the bridge “A” until it breaks the sealing foil “7” on the underside of the group. The contents “6” of the blister pack are expelled through window “L” (FIG. 1).

[0016] Graphic communications and label warnings can be applied to both the lower and upper components the assembly. Label “O” can carry warnings as well as instructions on drug regimen. Communications can also be enhanced by applying distinct and contrasting colors to each of the components.

[0017] This overall object of this invention is not tied to any particular dimensional requirement; therefore, this invention may be adapted to fit a variety of products. Specifically, portions of this invention can grow in size in order to accommodate distinctly drug regimen and drug dimensional requirements, etc.

[0018] While the invention has been described as having a preferred design, it is understood that it is capable of further modification, uses and/or adaptations of the invention following in general principle of the invention and
including such departures from the present disclosure as come within known or customary practice in the art to which
the invention pertains, as may be applied to the central figures hereinabove set forth and fall within the scope of the
invention of the limits of the appended claims.

1. A structural package which prevents ordinary thermo-formed drug packaging to be tampered, crushed and violated
in any form.

2. A structural package according to claim 1 wherein said includes child-resistant locking and release mechanisms.

3. A structural package according to claim 1 wherein said has appropriate geometry to accommodate various dimen-
sions (actual prototype dimensions 1.75"x5.00") and still retain its child-resistant properties.

4. A structural package according to claim 1 wherein said which has a mechanism which allows securing and releasing
the primary package (blister) based on adult’s cognitive abilities, tactile and color indicators.

5. A structural package according to claim 1 wherein said which its outer shell can be molded in a single part or in two
halves.

6. A structural package according to claim 1 wherein said which has is permanently sealed around primary packaging
group and do not allow separation of the same from the protective structure by any means.

7. A structural package according to claim 1 wherein said which has dedicated areas for labeled graphic communica-
tions application using any form of printing, stenciled, molded or glued processes.

8. A child resistant package for dispensing a plurality of products comprising: means for retaining the product, said
retaining means comprising a plurality of spaced recesses each of which is adapted to receive a different one of said
products and a film covering said recesses, base means comprising an exit opening, said retaining means being
moveably mounted relative to said base means so as to align each of said recesses, in turn, with said exit opening in said
base to permit the product in the aligned recess to be dispensed through said exit opening when external force is
applied to cause the product to break said film, and means for locking said retaining means to prevent said retaining
means from moving relative to said base.

9. The package of claim 8 further comprising a member connected to said base comprising a flexible element aligned
with and spaced from said exit opening to transfer external force to the product in the recess aligned with said exit
opening to cause the product to be dispensed through said exit opening.

10. The package of claim 8 wherein said locking means comprises latch means mounted on said base and normally
engaging said retaining means to prevent said retaining means from moving relative to said base and means for
causing said latch means to disengage said retaining means such that said retaining means can be moved relative to said
base.

11. The package of claim 9 wherein said latch means comprises trigger means for causing said locking means to
disengage said retaining means.

12. The package of claim 10 further comprising clip means for positioning said retaining means on said trigger
means.

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