

[54]	PACKAGING	2,968,391	1/1961	Sparks	206/42
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[21] Appl. No.: 455,615

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[52]	U.S. Cl.	206/531; 206/484; 206/532
[51]	Int. Cl. ²	B65D 83/04; B65D 85/56
[58]	Field of Search	206/42, 484, 498, 820, 206/530, 531, 532, 538

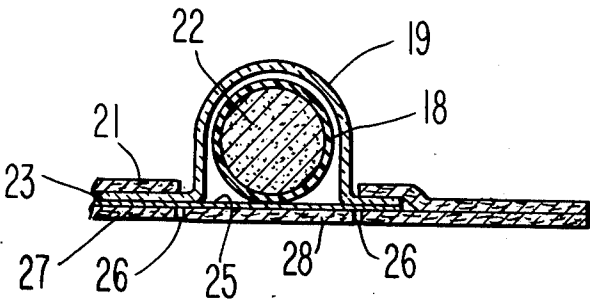
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[57] ABSTRACT

A childproof blister card useful for medicaments in discrete form. The card has perforated tabs for access to the contents, which are also covered by rupturable foil.

14 Claims, 11 Drawing Figures



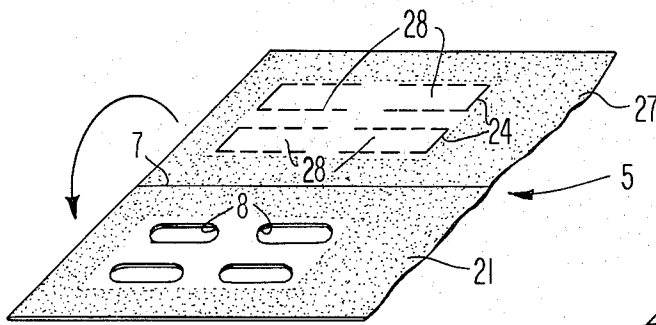


Fig. 1

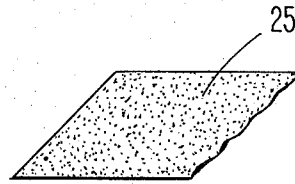


Fig. 3

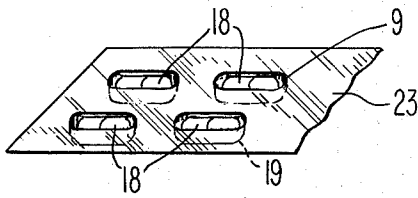


Fig. 2

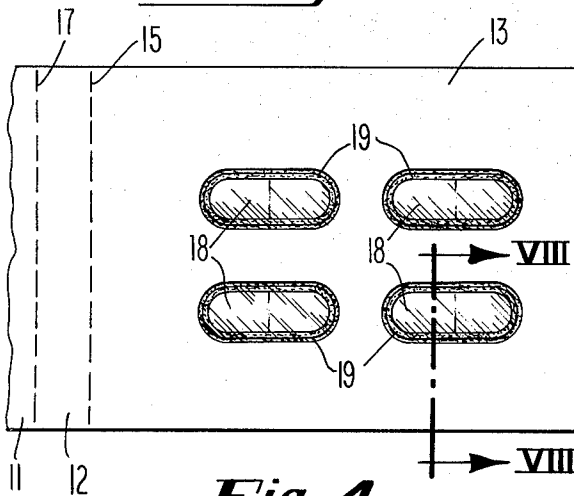


Fig. 4

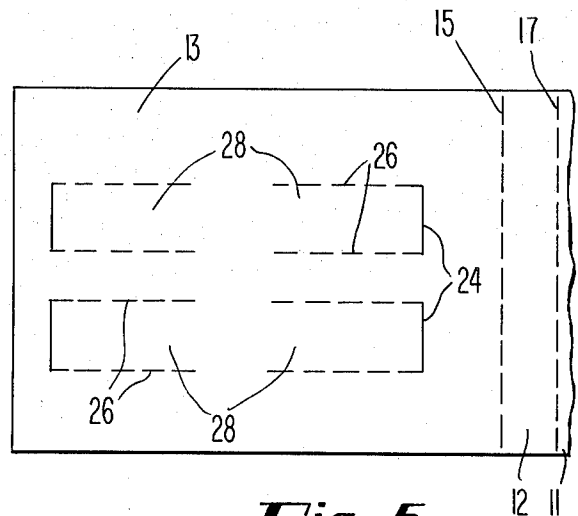


Fig. 5

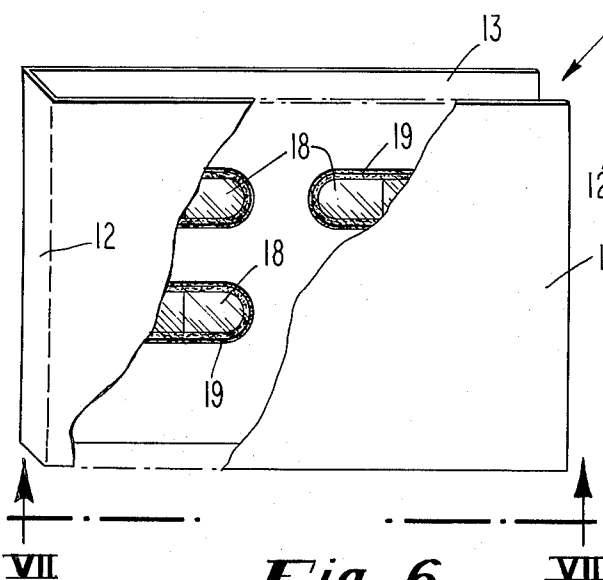


Fig. 6

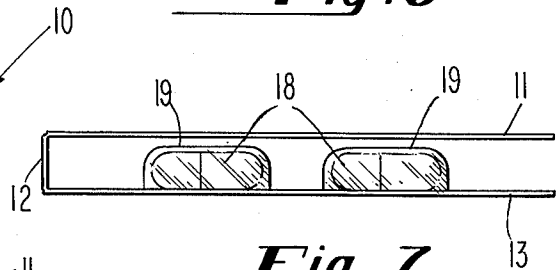


Fig. 7

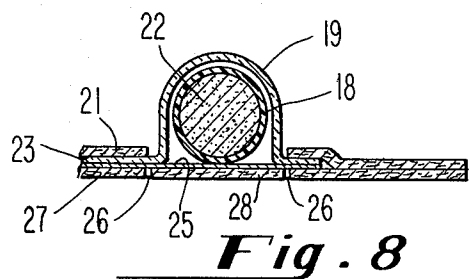
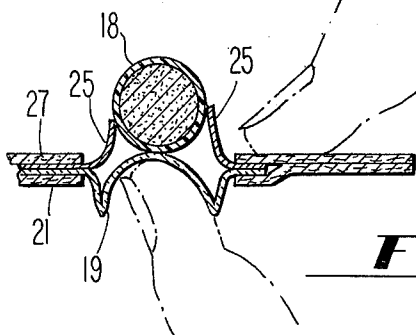
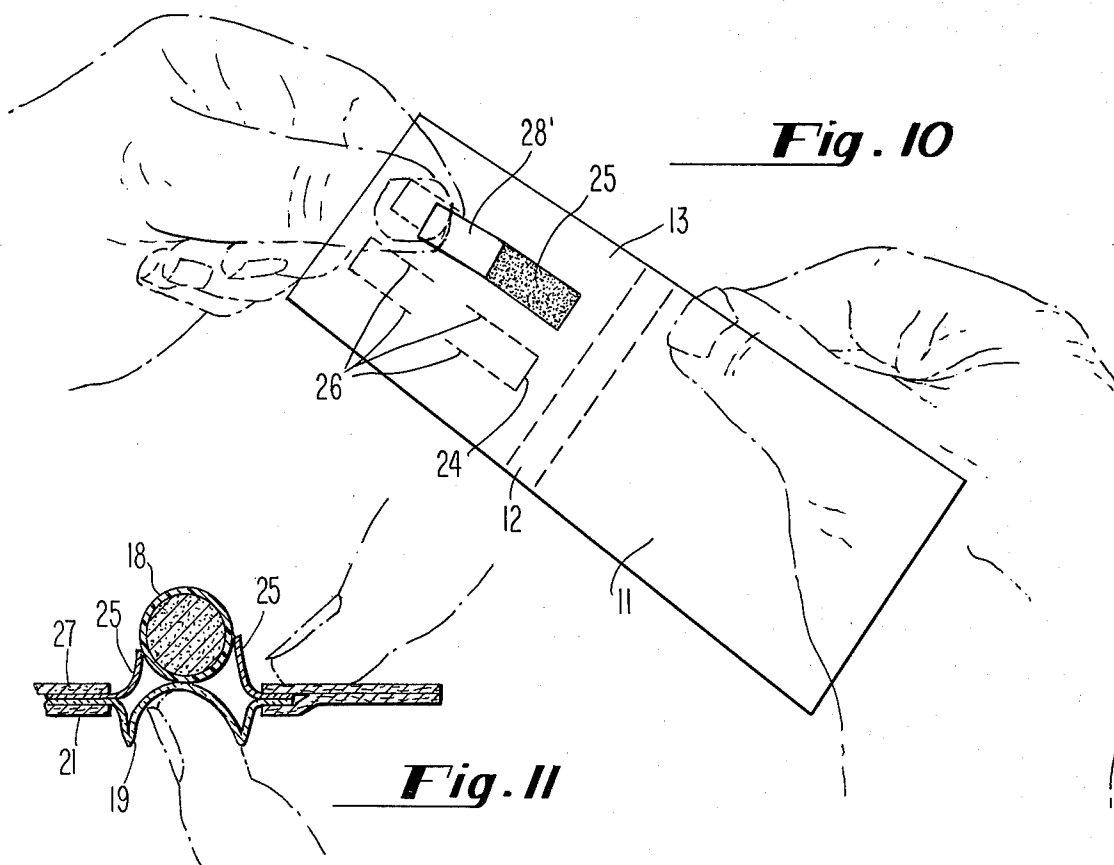
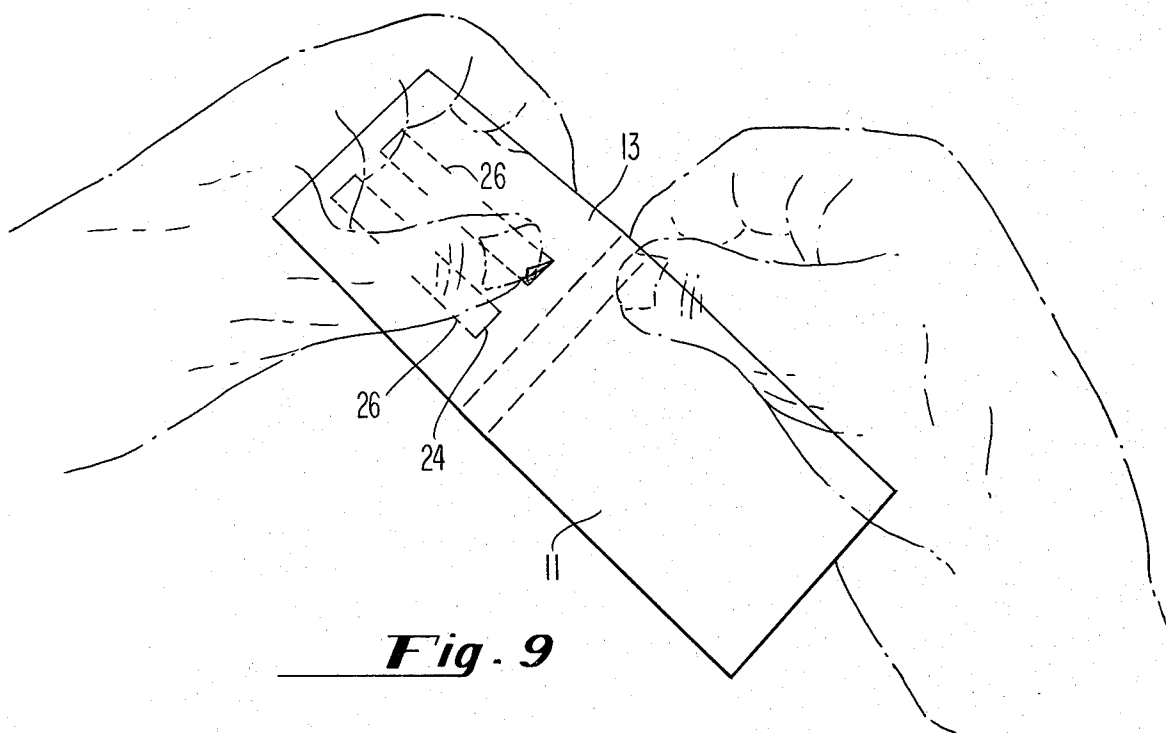


Fig. 8



PACKAGING

This invention relates to packaging of medicaments or the like in capsule, lozenge, or pill form, into discrete article enclosures such as are provided by a blister card, and especially to such a package designed so as to be unlikely to be openable by a child of insufficient discretion to treat the contents with due respect.

Blister packaging has become popular in recent years not only for small automotive parts, household articles, and miscellaneous hardware but also for medicaments in capsule, lozenge, or pill form. Because the contents are visible and often are brightly colored, children are attracted thereto, with substantial risk of injury if they succeed in opening such a package and ingesting the contents. Accordingly, there is a considerable demand to render such packages too difficult to open for children too young to realize the potential hazard in doing so.

A primary object of the present invention is provision of a blister package readily openable by an adult but not by a child.

Another object is improvement in access closures for blister packages.

Other objects of the present invention, together with means and methods for attaining the various objects, will be apparent from the following description and the accompanying diagrams of a specific embodiment of the invention, which is presented by way of example rather than limitation.

FIG. 1 is a perspective view of a foldable sheet of packaging material useful according to this invention with openings, perforations, and slits die-cut therein;

FIG. 2 is a similar view of a strip of plastic packaging material with blister-like protrusions formed downwardly therein and with capsules resting in the hollows so formed;

FIG. 3 is a strip of foil packaging material large enough to cover the openings into the hollows in FIG. 2;

FIG. 4 is a front view of the same package opened flat and with part of the normally overlying flap cut away;

FIG. 5 is a rear view corresponding to FIG. 4;

FIG. 6 is a perspective view of a blister card of this invention with the overlying flap partly cut away to reveal the underlying flap and contents in part;

FIG. 7 is an edge view of the same package taken at VII—VII on the preceding view; and

FIG. 8 is a transverse section, on an enlarged scale, taken at VIII—VIII on FIG. 4;

FIG. 9 is a rear view of the same package at an early stage of being opened, showing insertion of a fingernail into a slit of an access tab preliminary to severing thereof along perforations;

FIG. 10 is a like view of the remaining part of the package at a later stage of being opened, showing the opening of an access tab along perforations; and

FIG. 11 is a fragmentary sectional view of the same package, on an enlarged scale, at a still later stage, showing the pressing of a capsule through the foil covering an access opening.

In general, the objects of the present invention are accomplished, in a package having discrete article enclosures, such as a blister card for medicaments or the like in capsule, lozenge, or pill form, by means of a first strip having a plurality of blister-like protrusions therein outward from one face and leaving corresponding hollows and openings thereinto at the opposite face

thereof, a relatively rupturable second strip adherent to the latter face of the first strip and sealing the openings therein, a supporting card therefor overlying the second strip over the openings and having an openable access tab opposite each opening.

FIG. 1 shows sheet 5 of tag paper or equivalent packaging material with four die-cut openings 8 in two rows of two each in component flap 21 and four access tabs 28 in flap 27 arranged to register therewith when the sheet is folded over on itself along transverse fold line 7 as indicated by the arrow. The visible face of the sheet is coated with adhesive (indicated by light stippling) to secure the flaps together and sandwich therebetween the strips shown in subsequent views. Each tab 15 is rectangular and is outlined by a pair of parallel lines of perforation 26 joined at one end by slit 24 joining the lines at one end.

FIG. 2 shows in perspective transparent plastic strip 23, which has blister-like protrusions 19 formed downwardly therein, i.e., outwardly from the lower face, leaving corresponding hollows and openings thereinto in the upper face. Four such protrusions are shown, located to register with openings 8 in flap 21 of the preceding view. Resting in the hollows formed by such protrusions are capsules 18, one in each hollow.

FIG. 3 shows similarly foil strip 25 (shown stippled relatively darkly to indicate its metallic nature—rather than lightly to indicate adhesive as in the preceding view), which is large enough to cover and seal openings 9 in the blister strip when juxtaposed thereto.

FIGS. 4 and 5 show the resulting package, opened flat, from front and rear, respectively. Rear flap 13, which is plain overall, is largely cut away, but front flap 11 is shown in its entirety. The respective flaps are bounded in part by parallel lines of perforations (or other fold-inducing lines) 15 and 17 with narrow rectangular junction strip 12 therebetween. Each of four access tabs 28 visible in FIG. 5 is opposite one of the hollow openings left in the blister strip by formation of the protrusions (visible in FIG. 4) oppositely directed therein.

FIG. 6 shows in perspective, and FIG. 7 in edge view from the bottom, package 10 of this invention in the form of a blister card comprising overlying rectangular flap 11, underlying flap 13 of like plan, and narrow rectangular junction strip 12 interconnecting them. Flap 11 is partly cut away in FIG. 6 to reveal the underlying flap and contents in part—also shown from below in FIG. 7. Stippling of the area surrounding the capsules in FIG. 6 indicates foil layer 25 visible through the transparent blister strip.

FIG. 8 shows, considerably enlarged, a section taken through multiple-layered portions of the package as indicated on FIG. 4. First and second layers 21 and 27 of the flap sandwich the non-protruding portions of blister strip 23 and foil layer 25 over and sealing the openings therein. First layer 21 has openings therein to accommodate protrusions 19 of the blister strip, and each corresponding hollow holds capsule 18 with contents 22 therein.

FIGS. 9, 10, and 11 are sequential views, at stages in opening the illustrated embodiment of the invention, taken looking at the rear side, with hands shown in phantom overlying the views where appropriate. Thus, as shown in FIG. 9, with the respective flaps opened and coplanar, a person can insert a fingernail into one of the slits 24 to grip an access tab and can pull it open along perforated lines 26 as shown in FIG. 10. Foil 25

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which did not rupture when the tab was opened, is exposed through the resulting rectangular opening and continues to cover the underlying capsule. Finally, as shown in FIG. 11, depressing the corresponding blister protrusion with a finger forces the capsule to erupt through the foil and to emerge to the exterior.

First and second layers 21 and 27 of the card are conventionally formed from a single sheet of tag paper or the like, suitable punched out and perforated, adhesively coated (as with polyethylene) on one face, and folded over to sandwich other components of the package as described above. Blister strip 23 is conventionally made of transparent plastic, such as polyvinyl chloride (PVC), from which protrusions 19 are vacuum-formed in the usual manner, spaced at regular intervals so as to protrude through punched openings in the first layer of the card sheet. Before being sandwiched by the card material the blister strip has had the hollows left by its protrusions filled with the articles being packaged, whereupon foil strip 25 (usually a laminate with a central paper layer sandwiched by thin metal layers) is secured thereto, as by heat-sealing. After the layers of card material are juxtaposed, with the blister strip and foil therebetween, and are sealed to one another, usually by application of heat and pressure, perforation lines 15 and 17 are formed in the resulting two-ply card material, and individual cards are cut or stamped therefrom.

The end result is a package that a young child is unlikely to open successfully because the opening is accomplished on the side opposite that at which the contents are visible. A child able to reach the contents should have sufficient understanding and discretion to avoid ingesting such contents. The safety factor presented by such packaging will tend to protect adults who are too befuddled (as by age, drink, or drugs) to cope with the task of opening the package.

Although a particular embodiment has been shown and described, modifications may be made therein, as by adding, combining, or subdividing parts or steps, or substituting equivalents, while retaining significant advantages and benefits of the invention, which itself is defined in the following claims.

I claim:

1. A blister card for child-proof packaging of medications in discrete capsule, lozenge, or pill form, comprising a non-rupturable transparent plastic strip having a plurality of blister-like protrusions therein outward from one face and leaving a corresponding plurality of hollows and openings thereinto at the opposite face thereof, a rupturable foil strip adherent to the latter face of the plastic strip and sealing the openings therein, a supporting card portion including a first paper layer juxtaposed to the first face of the plastic strip and having one or more openings therein to accommodate the protrusions and including a second paper layer overlying the foil strip and the first paper layer and adherent thereto, the second paper layer having perforated a like plurality of individual access tabs in the parts thereof opposite the corresponding hollow openings.

2. Blister card according to claim 1, wherein the perforation of the adherent paper layers includes transverse edge-to-edge perforation enabling the card to be

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folded flap-like to cover the blister-like protrusions and their contents.

3. Blister card according to claim 2, wherein the perforated access tabs of the second paper layer are rectangular in outline, having two opposite edges perforated, one intervening edge slitted, and the other intervening edge neither perforated nor slitted.

4. In a blister card the combination of a first strip having a plurality of blister-like protrusions therein outward from one face, and leaving corresponding hollows and openings thereinto at the opposite face thereof, a relatively rupturable second strip adherent to the latter face of the first strip and sealing the openings therein, a supporting card therefor overlying the second strip over the openings and having an openable integrally formed individual access tab opposite each opening.

5. Blister card according to claim 4, wherein each of the access tabs is outlined at least in part by perforations.

6. Blister card according to claim 5, wherein each of the access tabs is outlined in part by a slit of length approximating the width of a fingernail.

7. Packaging blank useful in formation of a blister card or the like and comprising a foldable sheet having openings therein spaced to accommodate blister-like protrusions of another sheet and having also therein integral individual access tabs similarly spaced, whereby folding of the sheet therebetween permits juxtaposition of the respective access tabs to the respective openings.

8. Packaging blank according to claim 7, including an adhesive coating on the face thereof that is folded against itself in such juxtaposition.

9. Packaging blank according to claim 7, wherein the access tabs are rectangular and are outlined at least in part by a pair of parallel lines of perforations interrupted between adjacent tabs.

10. Packaging blank according to claim 9, wherein each access tab also is outlined in part by a slit of length approximating the width of a fingernail and joining the pair of perforated lines at an end thereof its end.

11. In a blister card having a plurality of non-rupturable blister-like protrusions therein outward from one face, leaving corresponding hollows and openings thereinto at the opposite face, the openings being covered by a layer of relatively rupturable material adherent to the face thereof bounding the openings, the improvement comprising a sheet overlying the rupturable layer and non-adherent to the rupturable layer portions opposite the openings and otherwise adherent to the contiguous portions of the card, the portions of the overlying sheet opposite the blister openings having respective access tabs, each tab being delineated from one another and from the edges of the sheet by a circumscribing pattern of weakness lines therein.

12. Blister card according to claim 11, wherein the weakness lines outline all but a minor peripheral extent of each tab.

13. Blister card according to claim 11 including at least two rows and two columns of access tabs, one for each opening; the portions of the sheet between each two adjacent tabs being smooth and continuous.

14. Blister card according to claim 11, wherein each access tab is outlined in part by parallel lines of weakness and an interconnecting slit.

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