(12) PATENT APPLICATION **(11)** Application No. **AU 200157700 A1**
(19) AUSTRALIAN PATENT OFFICE

(54) Title
Tamperproof evident packaging

(51)[7] International Patent Classification(s)
A61J 001/03

(21) Application No: **200157700** (22) Application Date: **2001.07.27**

(30) Priority Data

(31) Number	(32) Date	(33) Country
PQ9095	**2000.07.28**	**AU**

(43) Publication Date : **2002.01.31**
(43) Publication Journal Date : **2002.01.31**

(71) Applicant(s)
Jane Louise Fountain

(72) Inventor(s)
Dennis Donald Fountain

(74) Agent/Attorney
PIZZEYS,GPO Box 1374,BRISBANE QLD 4001

ABSTRACT

There is provided a package for dispensing single dose pharmaceutical articles such as tablets wherein an elastomeric film (30) is laminated to a clear layer (12) having recesses (14) formed therein. Tablets (18) are pressed into the recesses (14) against the resilient bias of the elastomeric film (30) and a frangible layer (16) is laminated to the elastomeric film (30) to package the tablets. Incision through the walls of the recess (14) and the elastomeric film (30) results in relaxation of the elastomeric film (30) away from the incision, indicating that the package has been tampered with.

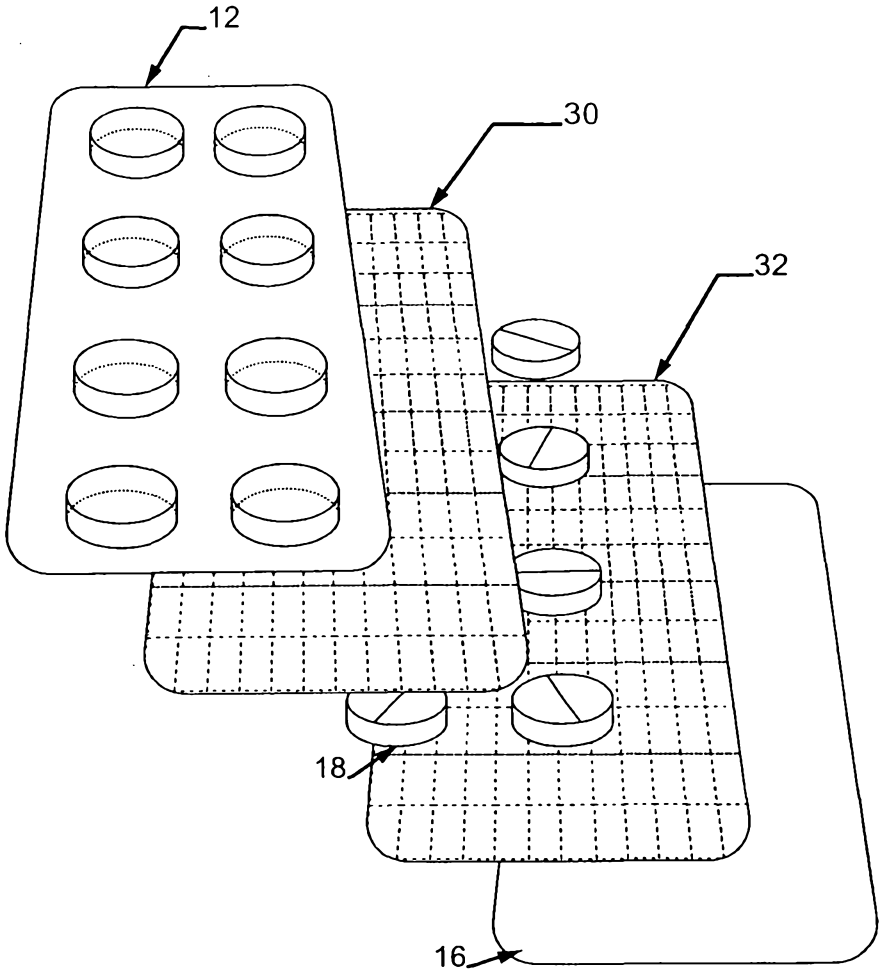


Fig 3

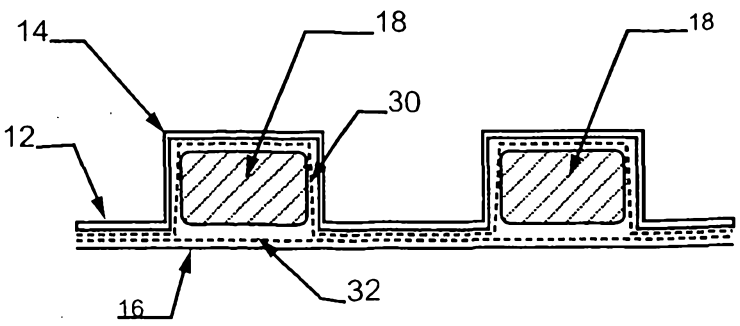


Fig 4

TAMPER EVIDENT PACKAGING

FIELD OF THE INVENTION

This invention relates to tamper evident packaging. This invention has particular application as a replacement for conventional blister packages for goods such as single dose pharmaceutical tablets or capsules.

BACKGROUND TO THE INVENTION

It has been known for extortion attempts to be made involving illegal tampering with blister packs of drugs such as paracetamol or aspirin. In particular these criminal acts have involved removing articles for consumption, such as tablets or capsules, from blister packs and replacing them with a poison substitute of similar appearance.

Removal and replacement of blister packaged consumable articles with poison substitutes has been undertaken in such a manner that purchasers of the packaged goods have been unaware of the tampering.

In US patent No. 4,546,881 to Tasma there is described a tamperproof package for bottled aspirin and the like however the invention disclosed therein is applicable to bottled goods rather than blister packaging.

It is an object of the present invention to provide a package which addresses the above problem.

SUMMARY OF THE INVENTION

According to an aspect of the present invention there is provided a package including a clear layer having a recess formed therein, an elastomeric

layer bonded to said clear layer at the periphery of said recess and elastically deformable into said recess to receive an article to be packaged, and a frangible layer bonded to said elastomeric layer and overlaying said article.

The portion of the clear layer defining the recess may be deformable whereby the article may be forced through the frangible layer, in the manner of a conventional blister pack. Alternatively, the frangible layer may be provided with a tear-off portion or other means permitting release of the article.

The article is preferably a single dose pharmaceutical such as a tablet, capsule, caplet, suppository, lozenge or the like. however, it is envisaged that the present invention may be useful for packaging other articles such as ampoules or other articles for which tamper evident packaging may be desirable.

The clear layer may have a plurality of said recesses formed therein, such that the package may discretely package a plurality of single doe pharmaceutical articles or a course of such articles. The webs of the clear layer between the recesses may be perforate or otherwise frangible to allow separation of discrete doses or a number of doses, without compromise to the packaging integrity of each dose.

The elastomeric layer may bear indicia arranged in a pattern selected whereby elastic recovery of the elastomeric layer renders a change in said pattern more highly visible through the clear layer on incision of the elastomeric layer. For example, the pattern may comprise a regular grid of lines printed on said elastomeric layer. The elastomeric layer may be of a transparent material

whereby the article is visible therethrough. Alternatively, the elastomeric layer may be of a translucent or opaque material.

The elastomeric layer may be formed up on the clear layer by any suitable means. For example the elastomeric layer may be laid up on the clear layer whereby the respective layers are bonded at the webs of the clear layer about the recess or recesses by pressure or heat sensitive adhesive or thermal bonding.

The elastomeric layer may be formed up whereby the article to be packaged deforms the elastomeric layer into the recess during the packaging process. Alternatively, the elastomeric layer may be pressed into the recesses and the aforementioned web bonding performed prior to insertion of the article, whereby the sealed interface between the walls of the recess and the elastomeric layer acts as a relative vacuum preventing collapse of the elastomeric layer unless the interface is breached. This may provide an indication that the clear layer has been breached such as by imperfection or a syringe or the like.

There may be provided a tearable resilient layer, preferably bonded under tension between the frangible layer and the elastomeric layer and trapping the article against said elastomeric layer. The tearable resilient layer may bear indicia arranged in an array selected whereby elastic recovery of the tearable resilient layer renders a change in the array visible through the frangible layer on incision of the tearable resilient layer. The array may comprise a regular grid of lines printed on said tearable resilient layer, or any other suitable indicia. Where indicia are used on the tearable resilient layer, the

frangible layer is preferably of a transparent or translucent material. The tearable resilient layer may be of a translucent or opaque material.

The frangible layer may be formed of any suitable material. For example, the frangible layer may be formed of foil or film layers or combinations thereof. The frangibility may comprise an inherent property of the material from which it is made, or the frangible film may be physically modified to provide this property. For example, the frangible layer is formed having one or more lines of weakness thereon to provide frangibility.

BRIEF DESCRIPTION OF FIGURES

In order that this invention may be more readily understood and put into practical effect, reference will now be made to the accompanying drawings which illustrate typical preferred embodiments of the invention and wherein:

Figure 1 is a perspective view of a prior art blister package of tablets.

Figure 2 is a cross section through A-A of Figure 1.

Figure 2A is a view similar to that of Figure 2 wherein an incision has been made at the base of a blister to enable removal of a tablet.

Figure 2B is view similar to that of Figure 2 wherein a poison tablet has been substituted and blister sealed up by means of an adhesive.

Figure 3 is an exploded perspective view of an embodiment of the invention.

Figure 4 is a cross section through the embodiment of the invention shown in Figure 3.

Figure 5 is a somewhat exploded view of a cross section through a further embodiment of invention.

Figure 6 is a plan view of a base of the package including escape regions demarcated by perforations.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

EXAMPLE 1- PRIOR ART

Referring now to Figure 1 there is depicted a blister pack 10 comprising a deformable plastic cover 12 having eight blisters 14 formed therein. Each of the blisters is closed by a base in the form of a foil 16 sealed to the underside of the cover. Sealed into each of the blisters 14 by the foil 16 is a an article being a tablet 18. In order to remove a tablet from the blister package, force is applied to the top of the blister which is deformable thereby forcing the tablet through the foil beneath it. When used as has been described it is impossible to replace any one of the tablets with a substitute tablet without the substitution being immediately apparent. The substitution is apparent as the ruptured foil is immediately visible. However, it has been known for criminals to make an incision around the base of a blister as shown at 20 in Figure 2. The top of the blister may then be lifted sufficiently as shown in Figure 2A to allow tablet 18 to be withdrawn. A substitute tablet 22, which may be poisoned for example, may then be inserted prior to sealing up the incision at the base of blister 14 by means of a clear drying glue 24. Once resealed by means of glue 24 the substitution is not apparent to consumers. It has been known for the previously described substitution operation to be criminally performed in order to extort money from pharmaceutical companies.

EXAMPLE 2

Referring now to Figure 3 there is depicted in exploded form a single dose-dispensing blister pack according to an embodiment of the present invention. A taut elastomeric member in the form of film 30 is positioned immediately beneath the shell 12. The film covers each of the tablets upon assembly as shown in cross section in Figure 4. In order to perform the previously described substitution operation it would be necessary to make a cut in film 30 in order to remove tablet 18. However, as the film is elastomeric and is under tension any incision in the film will be readily apparent as a visible aperture will form. Accordingly a consumer of a blister pack which has been tampered with will be alerted to the fact that tampering has taken place.

It is preferable that the film be semi-opaque or have a colour process or stripes upon it which will distort upon the film being incised. The purpose of this feature is to more readily indicate tampering of a package to a consumer.

EXAMPLE 3

According to a further embodiment of the invention a further stretched film 32 may be placed between the first elastomeric member and the foil as shown in somewhat exploded cross section in Figure 5. In that case foil 16 may be replaced with a clear plastic base 16A having tablet escape regions 36 bounded by perforations 38. Alternatively a transparent foil may also be used. The various layers may be interconnected by means of heat sensitive glue or by plastic rivets or by thermal welding.

In standard use a consumer applies force to the top of a blister of cover 14 in order to force it through lower film 32 and thence through an escape region 36 of base 16A. This arrangement discourages attempts to substitute a tablet 18 by making an incision from the underside of the package as an incision will penetrate film 32 generating a rupture in the film that will be apparent to a consumer through the clear base. As with upper film 30, the lower film may bear printed features such as a grid that will distort upon an incision being made in the film.

It will of course be realised that the above has been given only by way of illustrative example of the invention and that all such modifications and variations thereto as would be apparent to persons skilled in the art are deemed to fall within the broad scope and ambit of the invention as defined in the claims appended hereto.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A package including a clear layer having a recess formed therein, an elastomeric layer bonded to said clear layer at the periphery of said recess and elastically deformable into said recess to receive an article to be packaged, and a frangible layer bonded to said elastomeric layer and overlaying said article.

2. A package according to claim 1, wherein the portion of the clear layer defining the recess is deformable whereby said article may be forced through said frangible layer.

3. A package according to claim 1 or claim 2, wherein said clear layer has a plurality of said recesses formed therein.

4. A package according to any one of claims 1 to 3, wherein said elastomeric layer bears indicia arranged in a pattern selected whereby elastic recovery of said elastomeric layer renders a change in said pattern visible through said cover layer on incision of said elastomeric layer.

5. A package according to claim 4, wherein said pattern comprises a regular grid of lines printed on said elastomeric layer.

6. A package according to claim 4 or claim 5, wherein said elastomeric layer is of a transparent material whereby said article is visible therethrough.

7. A package according to claim 4 or claim 5, wherein said elastomeric layer is of a translucent or opaque material.

8. A package according to any one of claims 1 to 7, wherein there is provided a tearable resilient layer bonded between said frangible layer and said elastomeric layer and trapping said article against said elastomeric layer.

9. A package according to claim 8, wherein said tearable resilient layer bears indicia arranged in an array selected whereby elastic recovery of said tearable resilient layer renders a change in said array visible through said frangible layer on incision of said tearable resilient layer.

10. A package according to claim 9, wherein said array comprises a regular grid of lines printed on said tearable resilient layer.

11. A package according to claim 10, wherein said tearable resilient layer is of a transparent material whereby said article is visible therethrough.

12. A package according to claim 10, wherein said tearable resilient layer is of a translucent or opaque material.

13. A package according to any one claims 1 to 8, wherein said frangible layer is formed of foil or film layers or combinations thereof.

14. A package according to any one of claims 9 to 13, wherein said frangible layer is formed having one or more lines of weakness thereon to provide frangibility.

15. A package according to any one of the preceding claims, wherein said article is a single dose pharmaceutical article.

16. A package substantially as hereinbefore defined with reference to the accompanying Examples 2 and 3 and Figures 3 to 6.

DATED THIS TWENTY-SEVENTH DAY OF JULY, 2001.

JANE LOUISE FOUNTAIN

BY

PIZZEYS PATENT & TRADE MARK ATTORNEYS

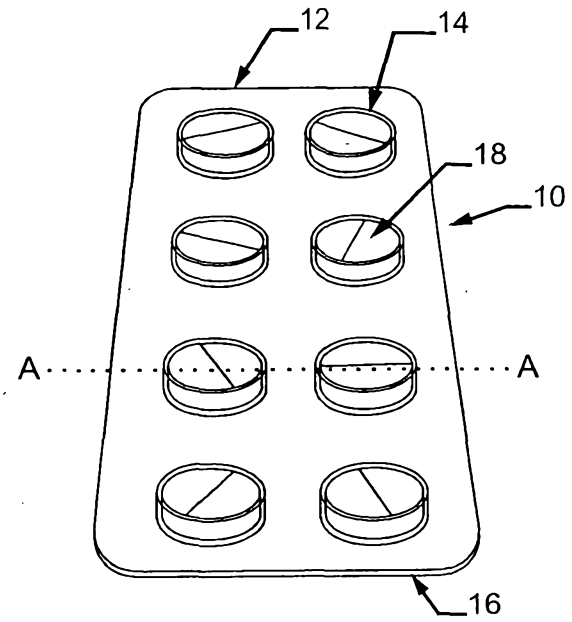


Fig 1

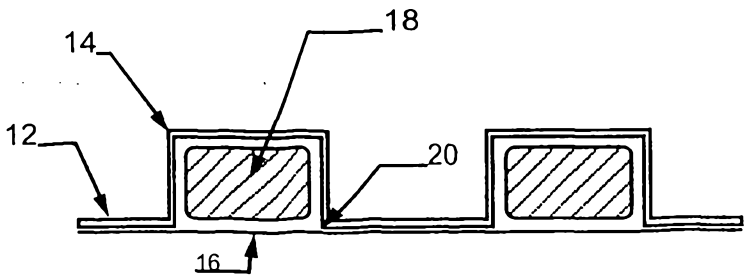


Fig 2

Fig 2A

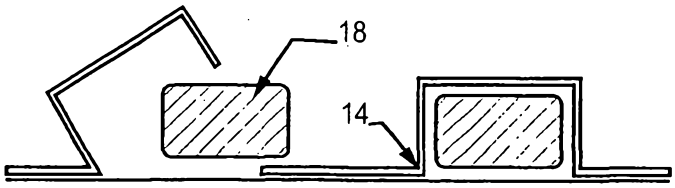


Fig 2B

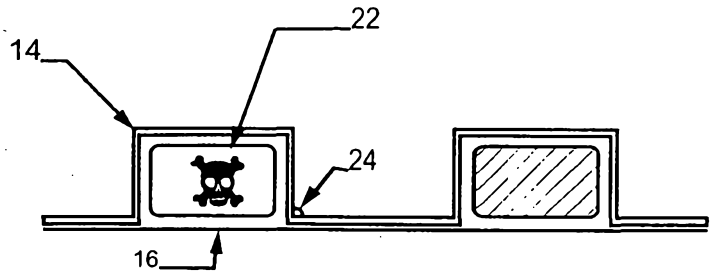


Fig 5

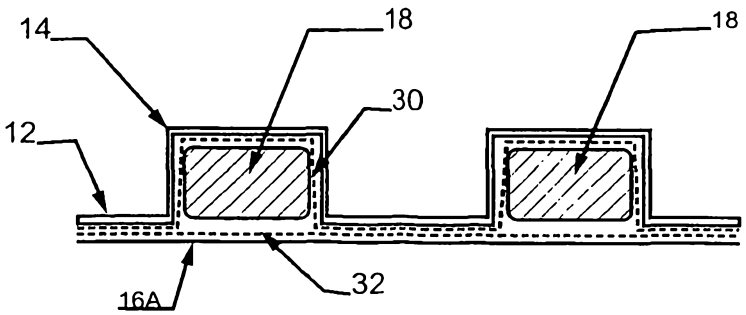
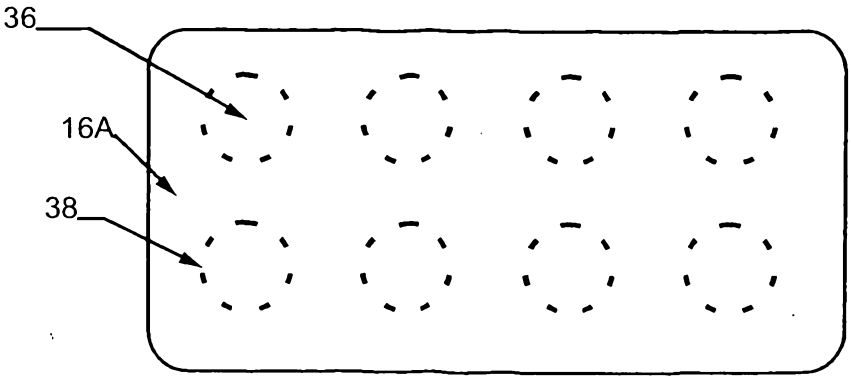


Fig 6



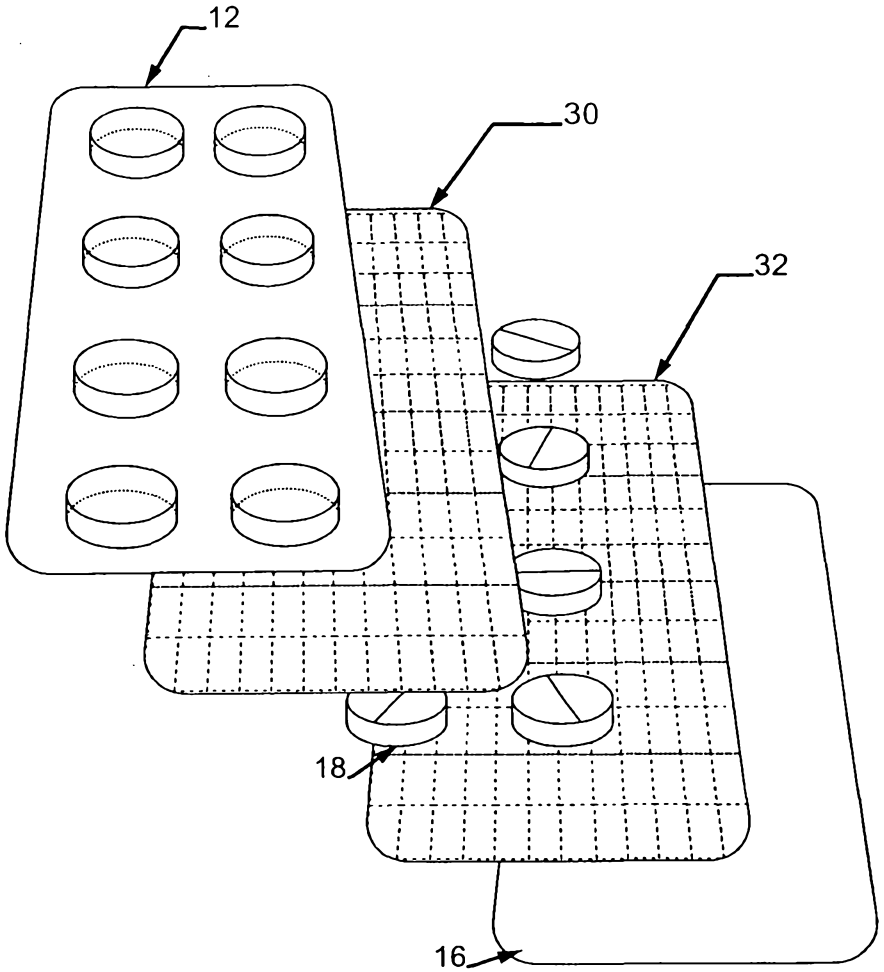


Fig 3

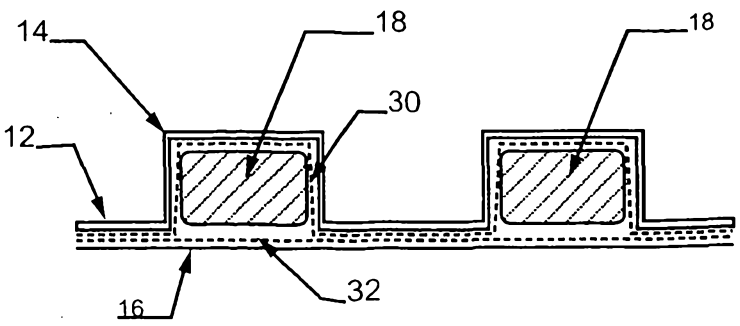


Fig 4