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(54) **Child resistant box**

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Boîte à ouverture difficile pour un enfant

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(56) References cited:
DE-A- 1 934 359 **FR-A- 2 193 738**
FR-A- 2 532 277 **US-A- 3 761 010**

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Description

This invention relates to a child-resistant container. More particularly the invention relates to a child-resistant container of the type comprising a tray and a sleeve the tray being slidable within the sleeve. Such containers of this general type are commonly used for matches and known as matchboxes.

Matchboxes of this type are well known and are easy to fill with matches during manufacture and the matches are easily accessible to the user when required. However a drawback of this type of matchbox is that the matches are also easily accessible to a child which can result in accidents and injury.

Hitherto designs for child-resistant matchboxes have had one or more of the following disadvantages. The child-resistant devices have not been robust enough to withstand attempts by a child to open the box; the opening mechanism has been too complicated to be easily used by an adult; the manufacturing process for the box and the filling process for the match contents has been too complicated and expensive; and the child proof mechanism has interfered with the presentation designs on the outside surface of the box.

FR-A-2532277 relates to a tamper proof box designed to prevent or demonstrate that the package has been tampered with according to the preamble of claim 1. The box comprises a section which is removed to permit sliding of the tray. This disadvantage of this package however is that the box operates as a normal box during its subsequent use by the consumer and there is therefore no protection whatsoever for the child who might have access to the box at home or elsewhere.

It is therefore an aim of this invention to provide a matchbox which cannot be easily opened by children but which can be easily opened by adults.

It is a further aim of this invention to provide a matchbox which is easy to manufacture and to fill and on which the same external designs can be printed as with conventional matchboxes.

It is a further aim of this invention to provide a child resistant box in which the child-resistant mechanism can be removed completely, if required in certain circumstances where for example the matches can be stored in a safe place, so the box can be used as a conventional box.

It is a further aim of this invention to provide a box which is difficult to open quickly and which cannot be opened without leaving evidence that the box had been opened. This provides additional security during handling and transportation.

It is a further aim of the invention to provide a box which does not open by accidental knocking of the box so spillage of the contents of the box is avoided.

The box of the present invention will be referred to as a matchbox throughout although the box according to the invention could be used for many other purposes where access to the contents by small children is to be

avoided, for example for medicaments.

According to the present invention there is provided a box consisting of an outer sleeve and an inner tray, the tray being slidable relative to the sleeve to open or close the box, a section of the sleeve which is releasably secured to the remaining part of the sleeve may be separated from the sleeve to release the tray wherein the box is a child resistant box and the section is fixedly secured to the tray such that the tray is released and slidable from the sleeve to provide access to the contents of the box by deforming the section to separate the section from the sleeve forming an aperture in the sleeve, and that by returning the sleeve to its original position to close the box the section automatically returns to fill the aperture in the sleeve thus preventing further sliding movement until the section is inwardly depressed once more.

According to the invention there is also provided a method of manufacturing a box according to claim 7.

One embodiment of the child-resistant box in accordance with the invention will now be described, by way of example only, with reference to the accompanying drawings in which:

Figure 1 is a perspective view of the complete box showing the underside upwards;

Figure 2 is a perspective view of the box sleeve;

Figure 3 is a perspective view of the box tray showing the underside upwards;

Figure 4 is a plan view of the skillet of the outer sleeve.

As shown in figure 1 a box 1 of the invention is shown comprising an outer sleeve 2 and an inner tray 3. The inner tray 3 contains the matches or other contents (not shown). The underside of the outer sleeve 2 comprises a section 5 which is formed by frangible serration 6 and by cut-outs 7 which serve as finger openings. Referring to figure 4 the section further comprises three parts marked B, A and B which are separated by crease lines 8. In all other respects the outer sleeve is identical to a conventional sleeve and graphic printing can be applied to the top bottom and side parts in the usual way. The inner tray 3 is manufactured with a strip of hot melt adhesive which is positioned so that it corresponds with part A of the section in the outer sleeve when the two parts are assembled to form the completed box. Alternatively the hot melt adhesive can be applied to the reverse side of the outer sleeve skillet in the area A shown in figure 4. When the box has been filled and assembled it passes over a heated platen to activate the hot melt adhesive thus fixing the tray 3 securely to the outer sleeve 2.

The completed box is not easily opened, which provides added security during transportation and handling and prevents accidental spillage. The user is able to

open the box in the following way: the two outer flaps B of the section 5 are lifted upwards by inserting a finger in each of the cut-outs 7 and breaking the serration 6. The action of raising the flaps B breaks the retaining serration 6 holding the section 5 to the outer sleeve. The section 5 remains attached to the underside of the tray 3. This operation is too complex for a child but could be readily achieved by an adult with the assistance of instructions on the outer sleeve 2. The box can then be opened by simultaneously pushing the section 5 inwards to free it from the surrounding cardboard of the sleeve 2 and by pushing the tray 3 lengthways in the normal way to push it out of the sleeve. After use the box can be closed again and the section 5 automatically locks back into the aperture it left behind in the outer sleeve 2. The box can therefore remain child-proof throughout its life.

Alternatively the box can be modified permanently so that it can be used as a normal box, if this is required, by removing the section from the inner tray. This can be achieved by a ripping action requiring the strength of an adult rather than a child. The box can thereafter be kept in a safe place.

Claims

1. A box comprising an outer sleeve (2) and an inner tray (3), the tray (3) being slidable relative to the sleeve (2) to open or close the box, and a section (5) of the sleeve (2) which is releasibly secured to the remaining part of the sleeve and may be separated from the remainder of the sleeve (2) to release the tray (3,) characterised in that the box is a child resistant box and that the section (5) is fixedly secured to the tray (3) such that the tray (3) is released and slidable from the sleeve (2) to provide access to the contents of the box by deforming inwardly the section (5) to separate the section (5) from the sleeve (2) forming an aperture in the sleeve (2) and that by returning the sleeve (2) to its original position to close the box the section (5) automatically returns to fill the aperture in the sleeve (2) thus preventing further sliding movement until the section (5) is inwardly deformed once more.
2. A box as claimed in claim 1, characterised in that the section (5) of the sleeve (2) is secured to the tray (3) by an adhesive.
3. A box as claimed in claim 2, characterised in that the adhesive is a hot melt adhesive.
4. A box as claimed in any of claims 1 to 3, characterised in that the section (5) of the sleeve (2) is joined to the remainder of the sleeve (2) by breakable perforations (6).
5. A box as claimed in any preceding claim, character-

ised in that the sleeves (2) have cut-out portions (7) arranged at right angles to the open ends of the sleeve (2) and along opposite sides of the section (5) which provide gripping apertures to separate the section (5) from the sleeve (2).

6. A box as claimed in claim 5, characterised in that the section (5) is rectangular, being divided into three strips (B, A, B) by two parallel folds lines (8) and the gripping apertures (7) being semi circular.
7. A method of manufacturing a box as claimed in any preceding claim, characterised by the steps of applying a hot melt adhesive to a section (5) of the sleeve (2) which is releasibly secured the remaining part of the sleeve and which is fixedly secured to the tray or the portion of the tray (3) aligned with said section (5) when assembled, filling the tray (3) with contents, assembling the tray (3) and contents in the sleeve (2) and passing the box over a heated platen to melt the adhesive and secure the sleeve (2) to the tray (3).

Patentansprüche

1. Eine Schachtel bestehend aus einer äußeren Hülle (2) und einer inneren Schubvorrichtung (3), die Schubvorrichtung (3) ist schiebbar im Verhältnis zur Hülle, um die Schachtel zu öffnen oder zu schließen, und ein Abschnitt (5) der Hülle (2), welcher lösbar befestigt ist am restlichen Teil der Hülle und vom restlichen Teil der Hülle getrennt werden kann, um die Schubvorrichtung (3) freizugeben dadurch gekennzeichnet, daß die Schachtel eine kindergesicherte Schachtel ist und daß der Abschnitt (5) fest an der Schubvorrichtung (3) befestigt ist, in der Weise, daß die Schubvorrichtung (3) freisetzbar und schiebbar von der Hülle aus ist, um Zugang auf den Inhalt der Schachtel zu schaffen, indem der Abschnitt (5) innen umgeformt wird, um damit den Abschnitt (5) von der Hülle (2) zu trennen und dabei eine Öffnung in der Hülle (2) geschaffen wird, und daß durch das Zurückbringen der Hülle (2) in ihre Ausgangsstellung die Schachtel automatisch verschlossen wird, wobei der Abschnitt (5) automatisch zurückgeht, um die Öffnung in der Hülle zu schließen, um somit anschließend Schubbewegungen zu verhindern bis der Abschnitt (5) erneut innen umgeformt wird.
2. Eine Schachtel wie in Anspruch 1 wird dadurch gekennzeichnet, daß der Abschnitt (5) der Hülle (2) an der Schubvorrichtung mit Klebstoffbefestigt ist.
3. Eine Schachtel wie in Anspruch 2 wird dadurch gekennzeichnet, daß der Klebstoff warm schmelzbarer Klebstoff ist.
4. Eine Schachtel wie in den Ansprüchen 1 bis 3 wird

dadurch gekennzeichnet, daß Abschnitt (5) der Hülle (2) mit dem Rest der Hülle (2) durch zerreibare Perforationen verbunden ist.

5. Eine Schachtel wie in allen vorangegangenen Ansprchen erwhnt, ist dadurch gekennzeichnet, da die Hllen (2) auszuschneidende Teile haben, die im rechten Winkel zu den offenen Enden der Hlle stehen und entlang den gegenberliegenden Seiten des Abschnitts (5), dadurch Greifffnungen bieten, um den Abschnitt (5) von der Hlle (2) zu trennen. 5 10
6. Eine Schachtel wie in Anspruch 5 bezeichnet ist dadurch gekennzeichnet, da der Abschnitt (5) rechteckig ist und in drei Streifen (B, A B) unterteilt ist durch zwei parallele Faltlinien und den Greifffnungen, die semi-kreisrund sind. 15
7. Ein Herstellungsverfahren einer Schachtel wie in vorangegangenen Ansprchen beschrieben, wird dadurch gekennzeichnet, da schrittweise hei geschmolzener Klebstoff auf einen Abschnitt (5) der Hlle (2) aufgetragen wird, der lsbar am restlichen Teil der Hlle und fest an der Schubvorrichtung befestigt ist, oder da ein Abschnitt der Schubvorrichtung (3) mit besagtem Abschnitt (5) eine Linie bildet, wenn sie zusammengebaut wird, da die Schubvorrichtung (3) mit Inhalt gefllt wird wobei die Schubvorrichtung (3) und Inhalt in der Hlle (2) zusammengebaut werden und die Schachtel ber eine erhitzte Walze zu fhren ist, um den Klebstoff zu schmelzen und die Hlle (2) und die Schubvorrichtung (3) zu befestigen. 20 25 30 35

Revendications

1. Une bote comprenant un tui extrieur (2) et un plateau intrieur (3) coulissable dans l'tui (2) pour ouvrir ou fermer la bote, et une section (5) de l'tui (2) qui est fixe de manire non permanente  la partie restante de l'tui et peut tre spare du reste de l'tui (2) pour librer le plateau (3). La particularit de cette bote est qu'elle est rsistante aux enfants et que la section (5) est fermement fixe au plateau (3) de telle manire que le plateau (3) est libr et coulissable dans l'tui (2) pour permettre l'accs au contenu de la bote en appuyant la section (5) vers l'intrieur pour sparer la section (5) de l'tui (2) qui forme une ouverture dans l'tui (2), et de telle manire que, lorsqu'on remet la section (5) dans sa position originale pour fermer la bote, la section (5) revient automatiquement remplir l'ouverture de l'tui (2), ce qui empche le plateau de continuer  coulisser jusqu' ce que la section (5) soit de nouveau enfonce vers l'intrieur. 40 45 50 55
2. Une bote conforme  la revendication 1, caractrise par le fait que la section (5) de l'tui (2) est fixe

au plateau (3) par un adhsif.

3. Une bote conforme  la revendication 2, caractrise par le fait que l'adhsif est une colle thermofusible autoadhsive.
4. Une bote conforme aux revendications 1, 2 ou 3, caractrise par le fait que la section (5) de l'tui (2) est fixe au reste de l'tui (2) par des perforations que l'on peut casser (6).
5. Une bote conforme  n'importe laquelle des revendications prcdentes, caractrise par le fait que les tuis (2) ont des portions  dcoupures (7) disposes  angle droit par rapport aux extrmits ouvertes de l'tui (2) et le long des cts opposs de la section (5), ce qui donne des ouvertures de prise pour sparer la section (5) de l'tui (2).
6. Une bote conforme  la revendication 5, caractrise par le fait que la section (5) est rectangulaire et divise en trois bandes (B, A, B) par deux lignes de pliage parallles (8) et que ses ouvertures de prise (7) sont en demi-cercles.
7. Une mthode de fabrication d'une bote conforme  n'importe laquelle des revendications prcdentes, caractrise par les tapes suivantes : application d'une colle thermofusible autoadhsive  une section (5) de l'tui (2) qui est fixe de manire non permanente  la partie restante de l'tui et qui est fermement fixe au plateau (3) ou  la partie du plateau (3) aligne sur la dite section (5) une fois la bote assemble ; remplissage du plateau (3) avec le contenu ; assemblage du plateau (3) et de son contenu dans l'tui (2), et passage de la bote sur un rouleau chauff pour faire fondre la colle thermofusible autoadhsive et fixer l'tui (2) au plateau (3).

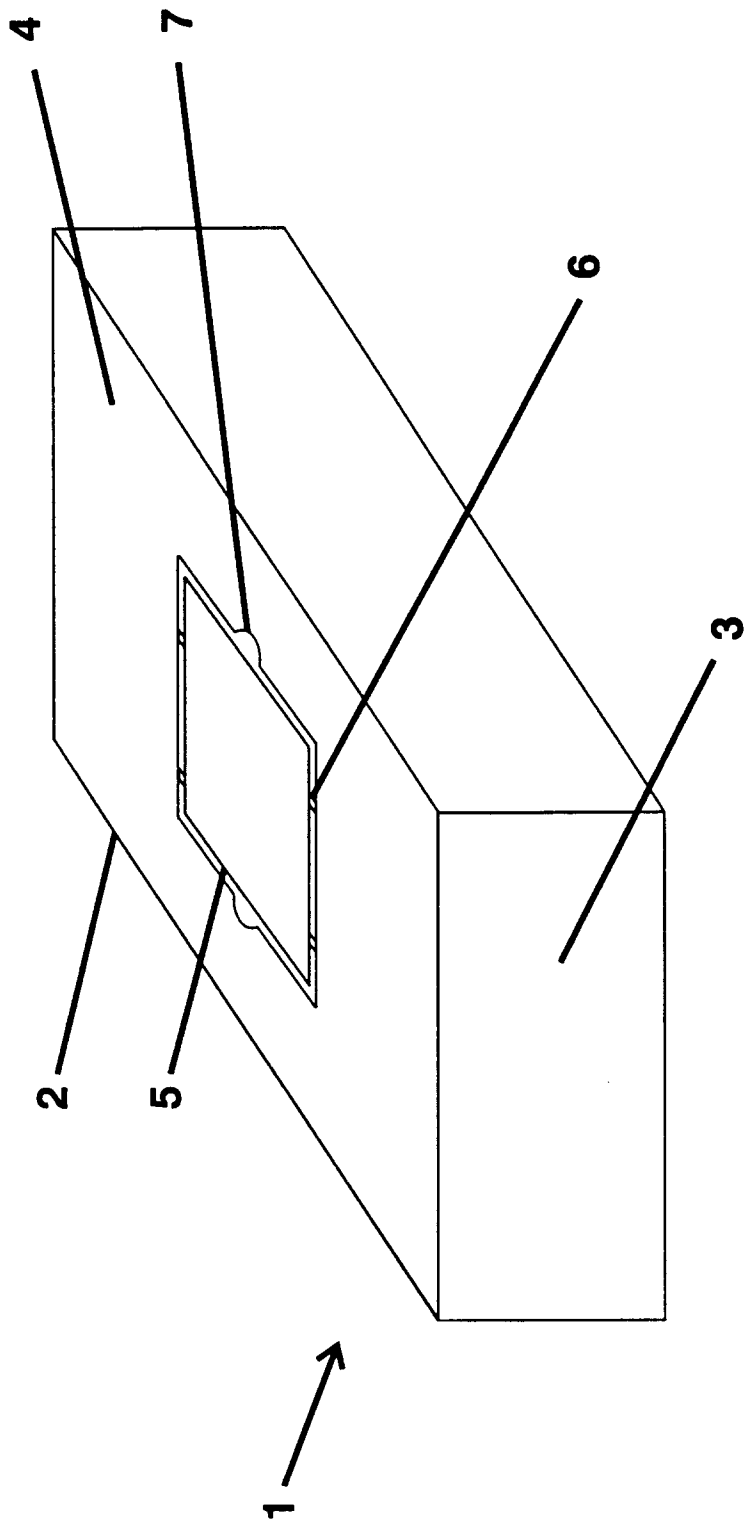


Figure 1

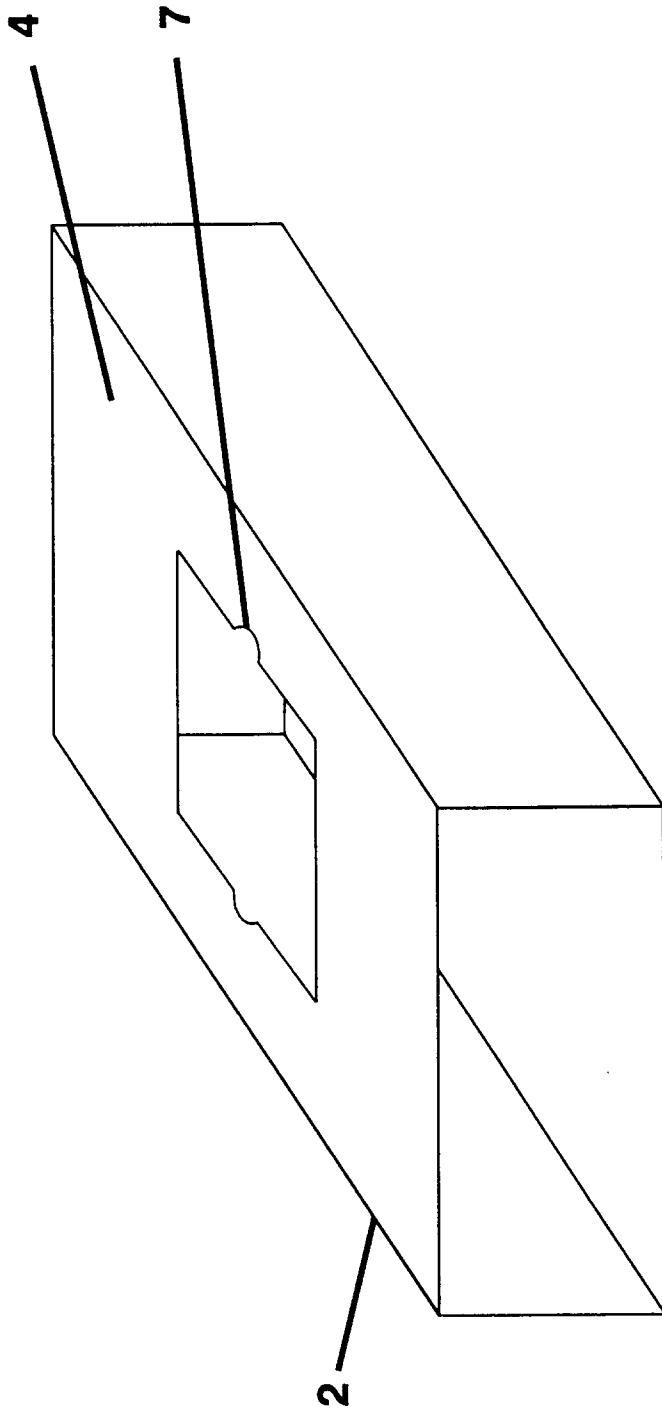


Figure 2

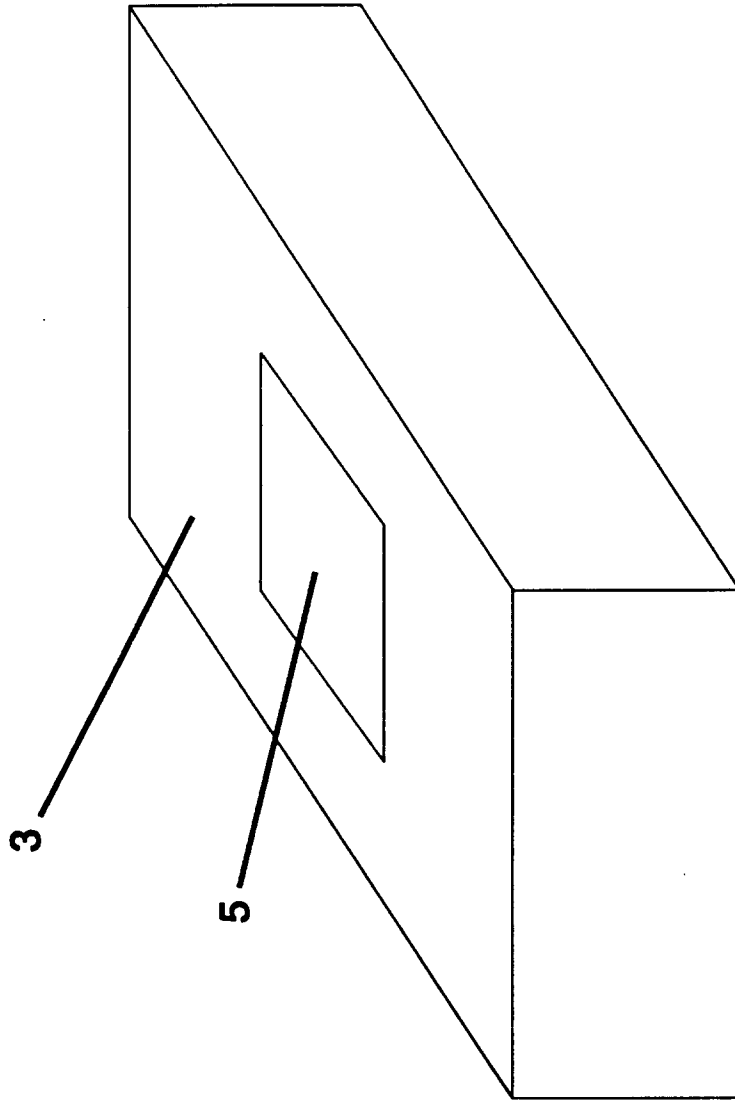


Figure 3

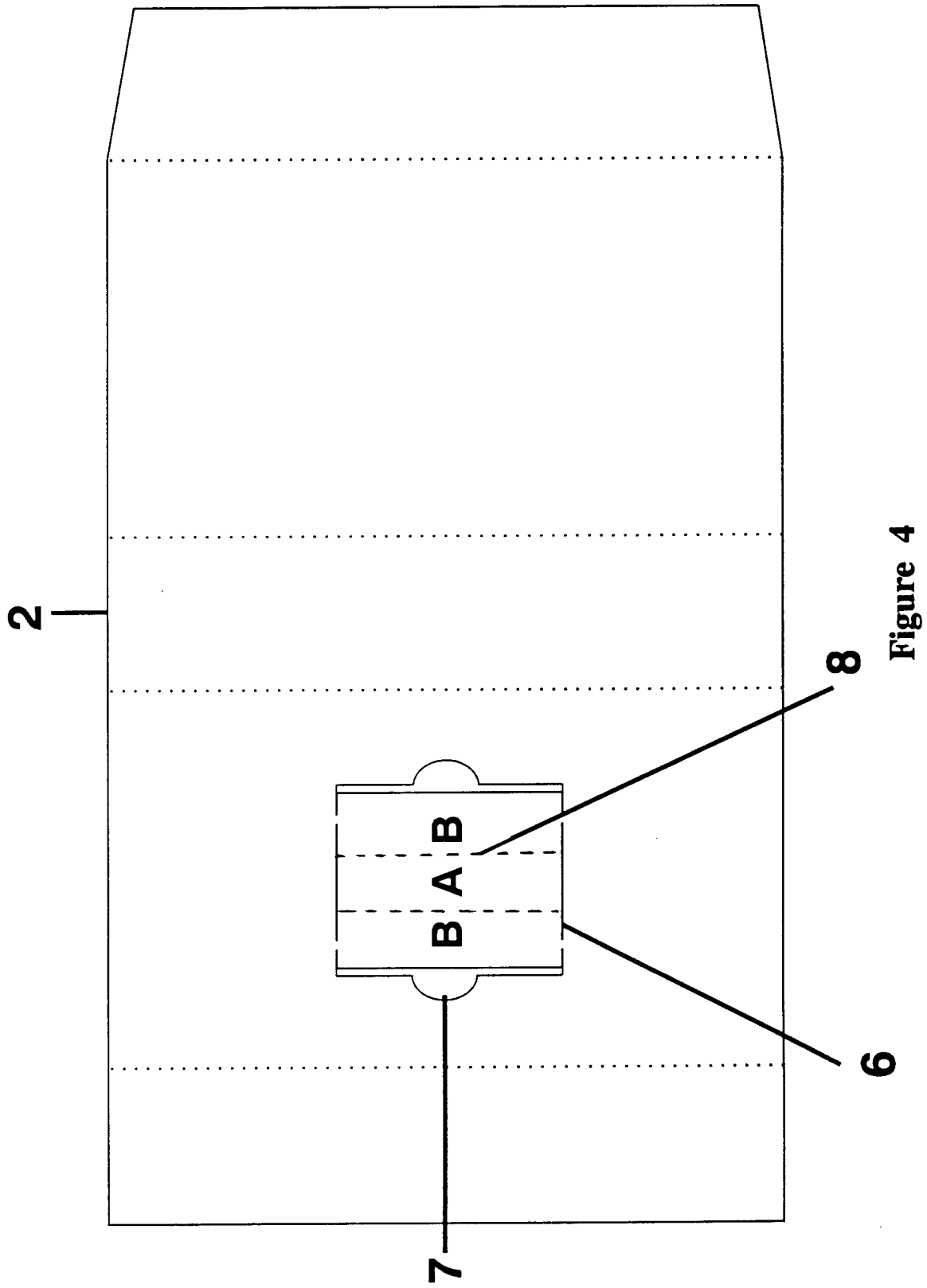


Figure 4