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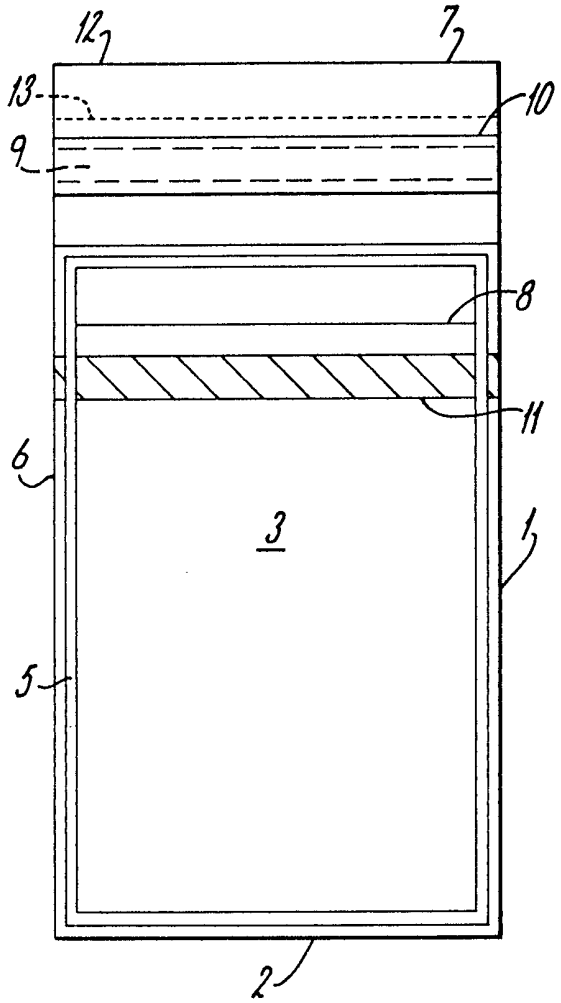
(54) Improvements relating to containers

(57) A tamper-evident container of flexible, thermoplastics, sheet material comprises a line opening 8 and a sheet material closure portion 7 carrying an area of adhesive 9. When the closure portion is moved to a closure position, the area of adhesive completely overlies and seals the line opening. A tear-off receipt 13 may be provided on portion 7.

Fig.1.



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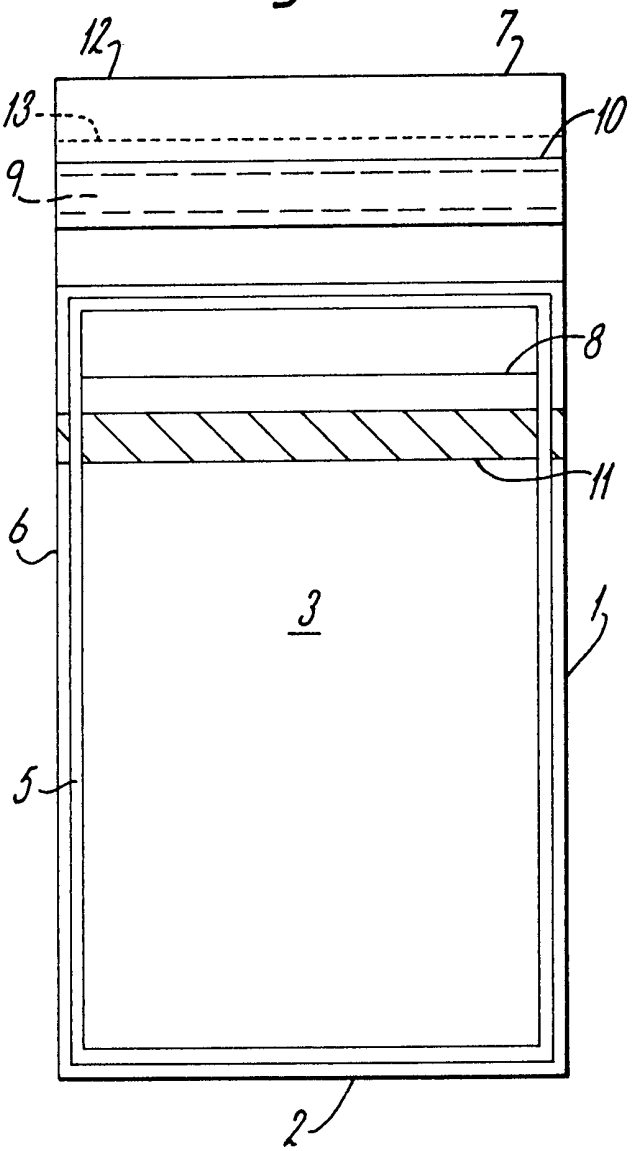

Fig.2.

SPECIFICATION

Improvements relating to containers

This invention relates to sheet material containers.

Containers manufactured from flexible sheet materials are used for packaging a wide variety of products, the nature of the product being a determinant of the form of the container. Thus a container may take the form of, for example, a bag, a sack, a pouch or a sachet. The container may be formed of paper, foil or a plastics material or of a combination of such materials.

It is a requirement with some containers that after a product has been placed in the container and the container has been closed, the container cannot thereafter be opened and reclosed without the occurrence of the opening and reclosing, or an attempt thereat, being visually evident. Proposals for meeting this requirement have been made in relation to, for example, bags used by banks for the transfer of currency notes.

A known form of tamper-evident currency note bag is formed from a single strip of flexible plastics packing material which is folded laterally, the side edges of the superimposed portions of the strip being heat welded to each other thereby to provide a container part of the bag. An end part of one of the portions of the strip extends from the mouth of the container part to provide a closure flap. Adhesive is applied to the flap in a zone which extends across the full width of the flap. A corresponding zone of the container part, close to the mouth thereof, also has adhesive applied to it, so that after cover strips have been removed from these two zones and the flap has been folded over to close the mouth of the container part, the flap is bonded to the container part such that thereafter any attempt to separate them will result in a distoration of the plastics packaging material. However, when the bag has been closed, the interior thereof is not totally enclosed by the plastics material since access can be obtained to the interior at each end of the fold line of the flap.

It is an object of the present invention to provide in simple manner a tamper-evident container which after having been closed permits no access whatsoever.

The present invention provides a sheet-material container comprising an opening line for providing access, through an opening extending through the sheet material, to the interior of the container, and a closure portion of sheet material secured to said container, said enclosure portion being movable to a closure position wherein said closure portion covers said opening line and adhesive applied to said closure portion and/or to said container bonds said closure portion to said container to completely seal said opening.

The closure portion of sheet material may be hingedly or foldably attached to the container such that it may be moved to its closure position without having to be first detached from the container. In such case the closure portion may advantageously be provided as an integral extension of the sheet material forming part of the container. Alternatively, and less preferably, the closure portion may be detachably secured to the container at such position as to require to be detached from the container for movement to its closure position.

The opening line may take the form of a slit or of a line of weakening, as for example a line of perforations, which is readily manually severed.

In order that the present invention may be clearly understood and readily carried into effect, reference will now be made, by way of example, to the accompanying diagrammatic drawing, in which

Figures 1 and 2 show front and side views respectively of a tamper-evident security bag.

The security bag of Figs. 1 and 2 is formed from a single strip 1 of flexible thermoplastics material, such as polyethylene or polypropylene, which is folded laterally along a fold line 2. The superimposed portions of the strip 1, designated 3 and 4, are heat welded to each other in a zone 5 which extends parallel with and close to each of the longitudinal and each of the laterial edges of the portions 3, 4. There is thus provided an envelope-like container 6. The portion 4 is longer than the portion 3, thus to provide a closure flap 7.

At an end region of the container 6 closer the closure flap 7 an opening line in the form of a slit 8 extends across the portion 3, terminating at each end at the weld zone 5. The slit 8 provides access to the interior of the container 8.

A band 9 of a high-tack adhesive extends across the full width of the closure flap 7. Applied over the top of the adhesive band 9 is a releasable cover strip 10 which is somewhat wider than the band 9, there being thereby provided finger-release edges.

In use of the security bag, the item(s) to be held in the bag is/are introduced into the container 6 through the slit 8, the cover strip 10 is removed from over the adhesive band 9 and the closure flap 7 is folded over onto the portion 3, the fold line being close to the adjacent laterally extending part of the weld zone 5. The disposition of the adhesive band relative to the fold line of the flap 7 is such that when the flap 7 is brought down onto the portion 3, the band 9 straddles the slit 8 so that the slit 8 is completely overlain by the band 9. Thus as well as the flap 7 being bonded to the portion 3 in tamper-evident manner, the slit 8 is completely sealed and there is no access opening whatsoever to the

interior of the container 6.

Since the adhesive of the band 9 is a high-tack adhesive, the flap 7 is so firmly bonded to the portion 3 that should any attempt be made to separate the flap 7 and the portion 3, the thermoplastics material of which they are formed would be distorted, so providing a clearly visible indication that such an attempt had been made.

A band 11 of security printing, which may for example be microsecurity printing, is applied across the outer face of portion 3. The band 11 extends across the full width of the portion 3 at such position longitudinally thereof as to be immediately adjacent the band 9 when the flap 7 has been brought to its closure position. The security printing is suitably applied in two inks, one comprising a hydrocarbon base and one comprising a hydrocarbon-free base. Thus should an attempt to made to release the adhesive bond at the band 9, using a chemical solvent, this fact will be evidenced by the disturbance of at least one of the inks by the solvent.

A further security feature is provided by virtue of the weld zone 5 being embossed over its full extent so that it is made impossible to gain access to the interior of the container 6 across the zone 5 and then to reseal the container 6 without the fact being made visually discernible by the consequent distortion of the form of the embossment.

A line of perforations may be provided across the flap 7 centrally of the adhesive band 9 so that an attempt to lift the flap 7 from the container 6 is likely to be evidenced by a tearing of the flap 7 at the line of perforations. Security printing may be provided on the flap 7, the printing extending across the line of perforations. The bag may be one of a large number each of which bears a sequencial reference number, in which case the security printing extending across the line of perforations comprises the reference number of the bag. The reference number may also be printed on a tear-off receipt portion 12 of the flap 7, which portion 12 is detachable by tearing along a further line of perforations 13.

Although as above described, adhesive is applied only to the flap 7, adhesive could additionally, or alternatively, be applied to portion 3 at each side of the slit 8.

CLAIMS

1. A sheet-material container comprising an opening line for providing access, through an opening extending through the sheet material, to the interior of the container, and a closure portion of sheet material secured to said container, said closure portion being movable to a closure position wherein said closure portion covers said opening line and wherein adhesive applied to said closure portion and/or to said container bonds said closure portion to said container to completely seal said opening.

2. A container according to Claim 1, wherein said opening line takes the form of a slit.

3. A container according to Claim 1, wherein said opening line takes the form of a readily manually severed line of weakening.

4. A container according to Claim 1, 2 or 3, wherein said closure portion is hingedly attached to said container in such manner that said closure portion may be moved to said closure position without said closure portion having to be detached from said container.

5. A container according to any one of the preceding claims, wherein said closure portion is an integral extension of the sheet material forming part of said container.

6. A container according to any one of the preceding claims, wherein a weld line extends in a closed configuration and bounds said interior of said container, and said opening line at each end thereof extends to said weld line.

7. A container according to any one of the preceding claims, wherein the dimensions of the area of application of said adhesive on said closure portion are such that when said closure portion is in said closure position, said area of application extends beyond the ends of said opening line.

8. A container according to any one of the preceding claims, wherein said sheet material of said container is flexible, thermoplastics material.

9. A sheet-material container substantially in accordance with that described hereinabove with reference to the accompanying drawing.

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