United States Patent

Van Inwagen

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[54] LOCK PACKAGE

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[52] **U.S. Cl.** **229/19**, 229/9

[51] **Int. Cl.** **B65d 5/38**

[58] **Field of Search** 229/9, 10, 11, 19, 20

[56] **References Cited**

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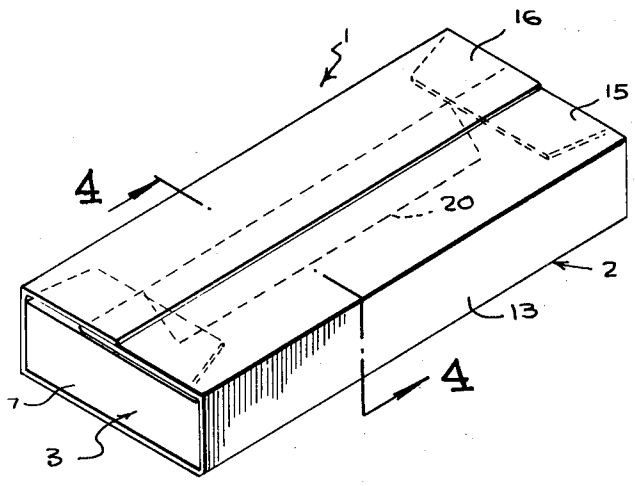
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[57] **ABSTRACT**

A package of a tray and enclosing sleeve wherein the tray has inturned end flaps and the sleeve has an internal, depending locking tab of a length substantially equal to the spacing between the adjacent edges of the tray end flaps to swing downwardly between the tray and flaps when the tray is inserted into the sleeve to lock the tray against removal from the sleeve. In one form, the tray is open topped and the lock can be released. In another, the tray has a closed top and the sleeve is provided with a tear strip to open the package.

5 Claims, 6 Drawing Figures



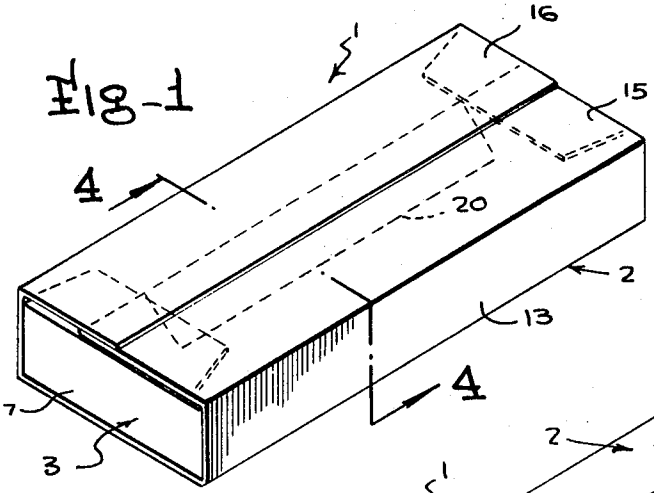


Fig-1

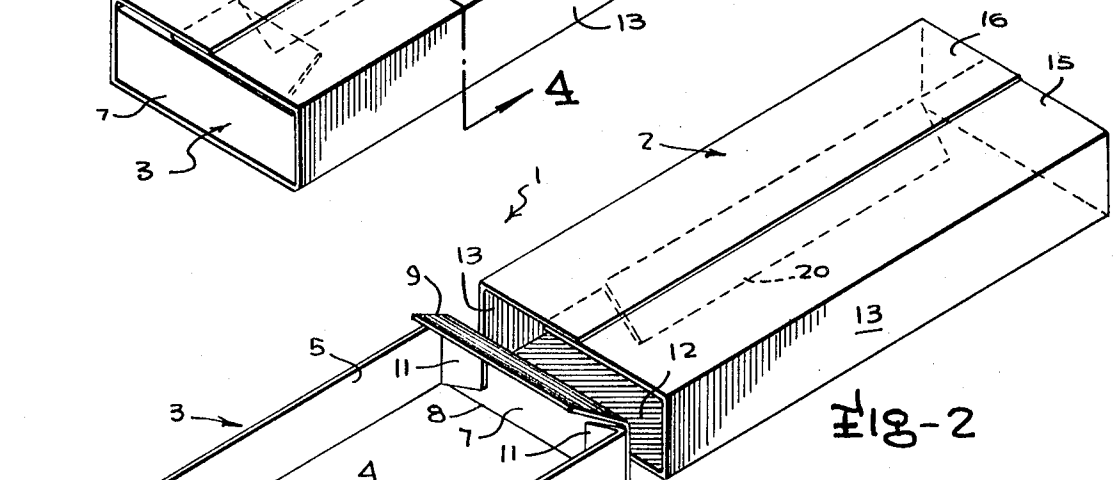


Fig-2

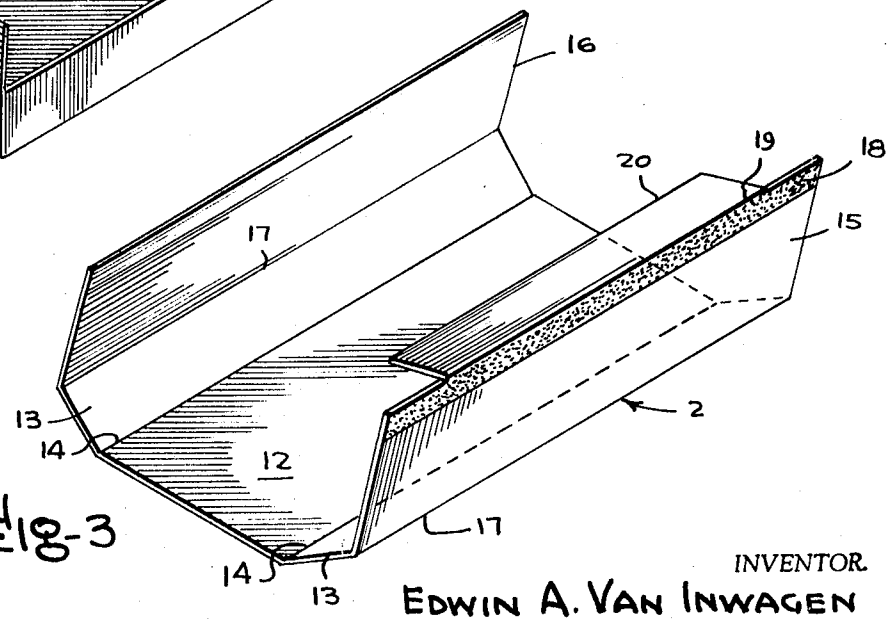


Fig-3

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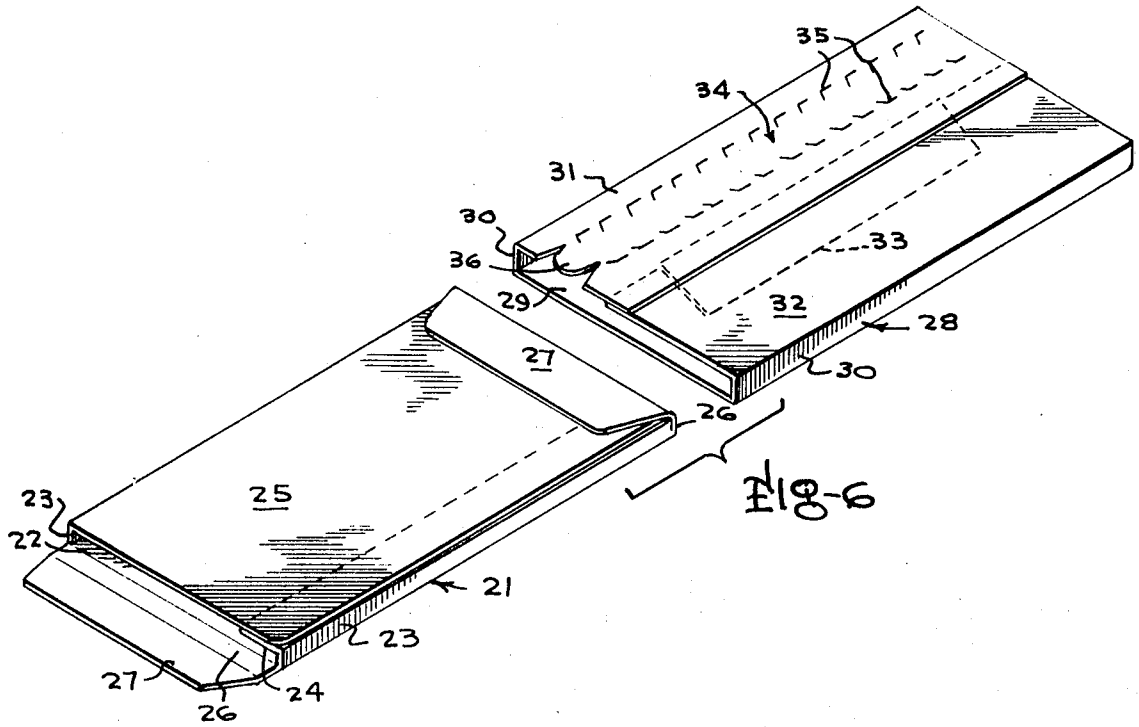


Fig-6

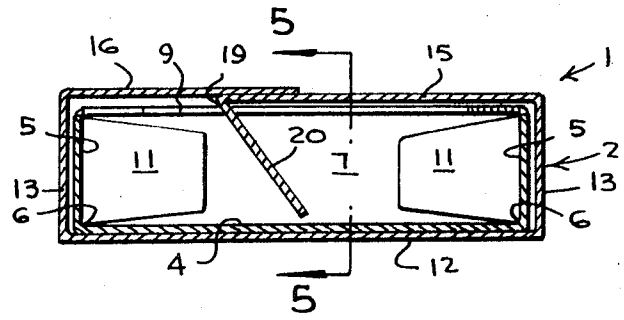


Fig-4

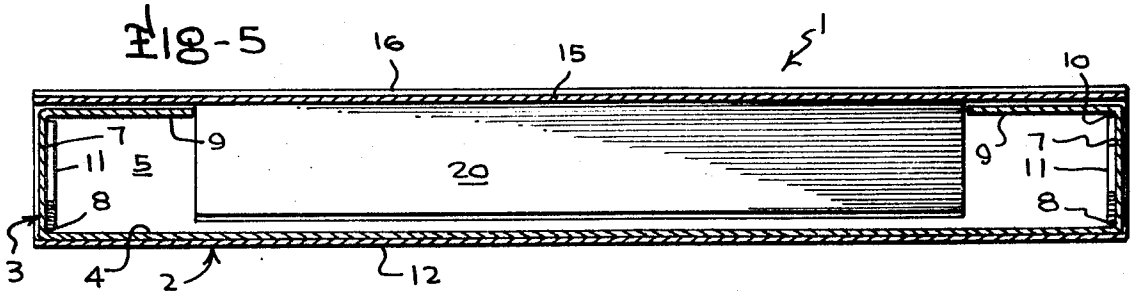


Fig-5

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LOCK PACKAGE

BACKGROUND OF THE INVENTION

This invention relates to packages, and more particularly to packages of paper board construction of the type having an outer sleeve and a tray slidable within the sleeve.

The sliding tray type of package is used in merchandising many different articles. It is convenient for the articles can be packed within the tray and the tray then slipped with the sleeve enclosing the tray and articles, and complete the package. When the tray is removed from the sleeve, the articles are open for selection, and, if more than one article is contained in the tray, one can be removed without removing, or disturbing, the others.

This type of package cannot be handled freely without danger of the tray sliding from the sleeve and spilling, or breaking, the contents. Consequently, it has been necessary, in many instances, to place a seal across the ends of the sleeve to hold the tray against accidental displacement. Other times, the entire package has been wrapped to provide an overall enclosure.

SUMMARY OF THE INVENTION

The general object of the present invention is to provide a package of the sliding tray type having self-contained means for holding the tray in place within the sleeve to prevent accidental slippage.

A more specific object is to provide a package of this type having means to operate automatically to lock the tray within the sleeve when the tray is slipped fully into the sleeve.

Another object is the provision of a sleeve and tray with cooperating locking elements which can be made with existing machinery and with very little extra material.

A further object of the invention is to provide a sleeve and tray which are self-locking when assembled, but which can be opened without destroying the package, and which will relock when the tray and sleeve are again assembled.

It is also an object to provide a self-locking package of the type described having means to rupture the sleeve to obtain access to the tray.

Other objects of the invention will become apparent from the following description of two practical embodiments thereof, when taken in conjunction with the drawings which accompany, and form part of, this specification.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a package embodying the principles of the present invention;

FIG. 2 is a perspective view of the sleeve and tray of the package separated from one another;

FIG. 3 is a perspective view of the blank from which the sleeve is formed shown in partially folded condition;

FIG. 4 is a transverse section through the assembled package, and is taken on the line 4—4 of FIG. 1;

FIG. 5 is a longitudinal section through the package, taken on the line 5—5 of FIG. 4; and

FIG. 6 is a perspective view of a disassembled package of slightly modified construction.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

In general, the invention includes a sleeve and tray type package, wherein the tray has inturned end flaps and the sleeve has a downturned extension of its glue flap of such length that when the tray is completely within the sleeve the extension will swing down between the tray end flaps and prevent movement of the tray in either direction.

Referring to the drawings in detail, the package 1 comprises a rectangular sleeve 2, open at its ends, within which a tray 3 may slide. When assembled, the two are locked together.

In that form of the invention shown in FIGS. 1 through 5, the tray 3 has an open top so that the contents are visible when the tray is removed from the sleeve. The tray is folded from a blank which includes a bottom panel 4, side wall panels 5 coextensive with the sides of the bottom and connected to the bottom along fold lines 6, end wall panels 7 along each end of the bottom, joined to the bottom along fold lines 8, and end flaps 9 joined to the end panels along fold lines 10. Glue flaps 11 are attached to the ends of the side wall panels. The tray is assembled by folding up the side and end wall panels and gluing the side panels 11 to the inner surfaces of the end wall panels 7. The end flaps 9 are inturned to overlie the bottom in parallel, spaced relation. As the end flaps are not folded sharply, they have a tendency to rise out of parallelism with the bottom and to maintain an upwardly inclined angle, as shown in FIG. 2.

Sleeve 2 is also folded up from a blank. It has a bottom panel 12, side panels 13 joined to the bottom along fold lines 14, top flaps 15 and 16, each joined to one of the side walls along fold lines 17. Top flap 15 is wider than flap 16 and underlies flap 16 when the two are overlapped to form a glue flap 18 for adherence to the overlying portion of flap 16. Flap 15 has an extension along the greater portion of its long edge, connected to the flap along a fold line 19, which serves as a locking tab 20. The length of locking tab 20 is just slightly less than the distance between the edges of the tray end flaps 9 when in inturned folded position. Sleeve 2 is assembled by folding up said panels 13, folding the top flaps, applying adhesive along the glue flap section 18 of the flap 15, and adhering the edge of flap 16 to the underlying glue flap 18. Locking tab 20 is folded to extend from the edge of flap 15 downwardly at an angle toward the sleeve bottom, as seen in FIG. 4.

When the parts are formed as described, and the tray packed, the end flaps 9 of the tray are inturned and one end of the tray is inserted into the open end of sleeve 2. By reaching into the opposite end of the sleeve with the finger, locking tab 20 can be lifted so that the end of the tray will move under the tab and hold it raised as the tray slides into the sleeve. As soon as the tray reaches the position where its ends are flush with the sleeve ends, the locking tab will ride off of the leading end flap of the tray and swing downwardly between the tray flaps. This will provide a stop against the inner edge of each end flap of the tray, so that the tray cannot move in either direction. Thus, the sleeve and tray will be effectively locked together, and the tray will be held against accidental displacement.

When an open topped tray is used, as in the package shown in FIGS. 1 through 5, it is possible to slip a finger into the end of the package, between the sleeve top and the tray end flap, and depress the end flap and raise the locking tab 20, so that the tray is free to be drawn from the sleeve. With this construction, the package can be reassembled and the elements will automatically re-lock.

Turning now to that form of the invention shown in FIG. 6, the same locking arrangement is used, but once locked, the sleeve must be ruptured to release the tray.

In the FIG. 6 construction, the tray 21 has a bottom 22, sides 23, a short glue flap 24 on one side 23, and a top panel 25 on the other. The glue flap and top panel are adhered to form a tube. The tray has ends 26 and end flaps 27, the end flaps being adapted to overlie the top when the tray is ready for insertion into sleeve 28.

Sleeve 28 is formed as before, with bottom 29, sides 30, top flaps 31 and 32, and locking tab 33 extending from top flap 32. It differs from the previous form is having a longitudinal tear strip 34 extending the length of top flap 31. The tear strip is formed by discontinuous tear lines 35 along each side. A finger tab 36 is provided at one end of the tear strip to facilitate removing the strip.

With the form of package shown in FIG. 6, the end flaps 27 of the tray overlie the top panel 25 and cannot be depressed. Consequently, when the tray is inserted in the sleeve and the locking tab 33 drops onto the tray top 25 between the edges of the end flaps 27, the package is permanently locked. Therefore, it is necessary to grasp the finger tab 36 and pull the tear strip upward, breaking the unsevered portions of the tear line 35 and separating the sleeve top into two sections. The sections of the top can then be opened and the tray removed.

With both forms of tray, the package is effectively locked and the tray will remain in place until purposely released. Of course, the open top tray type is reusable, while the closed top tray type is not.

While in the above practical embodiments of the invention have been disclosed, it will be understood that the precise details of construction shown and described are merely by way of example, and the invention may take other forms within the scope of the appended claims.

I claim:

1. In a package including a sleeve and a tray slidable within the sleeve, means to lock the tray within the sleeve comprising, end flaps carried by the tray and foldable inwardly to overlie the tray, and a locking tab depending from the inner surface of the sleeve and having ends spaced from the sleeve ends a distance equal to the length of the tray end flaps to fit between the tray end flaps in abutting relation with the tray end flaps when the tray is inserted into the sleeve.

2. In a package as claimed in claim 1, wherein the locking tab is connected to the sleeve by a hinged connection and is biased toward the opposite side of the sleeve.

3. In a package as claimed in claim 2, wherein the sleeve has a tear strip extending the full length of the sleeve in a direction parallel to the locking tab.

4. In a package as claimed in claim 1, wherein the sleeve is folded up from a blank having a bottom panel, side panels and overlapping top panels with said panels being interconnected by fold lines to form a rectangular sleeve, and the locking tab is an extension of the underlying one of the overlapping top panels.

5. In a package as claimed in claim 4, wherein the locking tab is hingedly connected along a fold line to the top panel from which it extends.

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