Aug. 18, 1970 E. R. HEYWORTH 3,524,580

SELF-LOCKING PACKAGE WITH RECESSED END PORTIONS

Filed Dec. 23, 1968 3 Sheets-Sheet 1

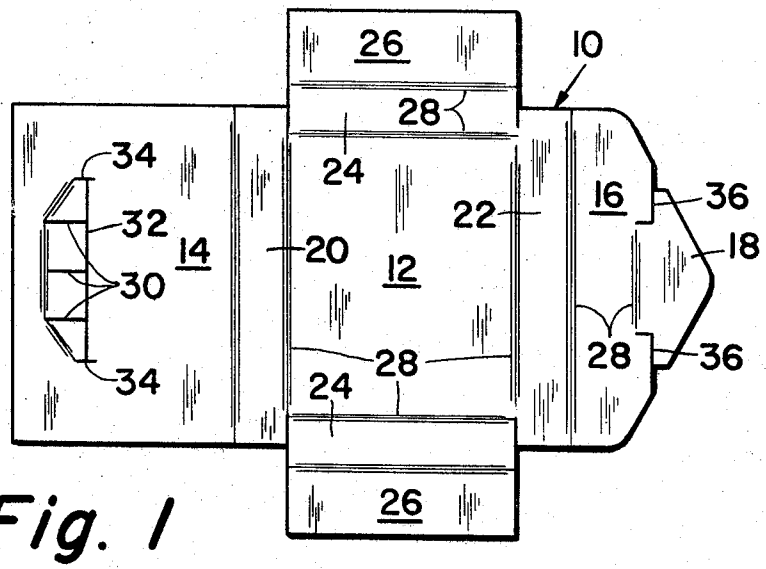

Fig. 1

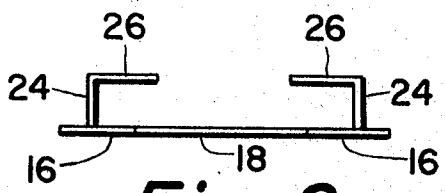

Fig. 2

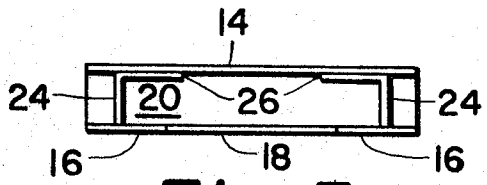

Fig. 3

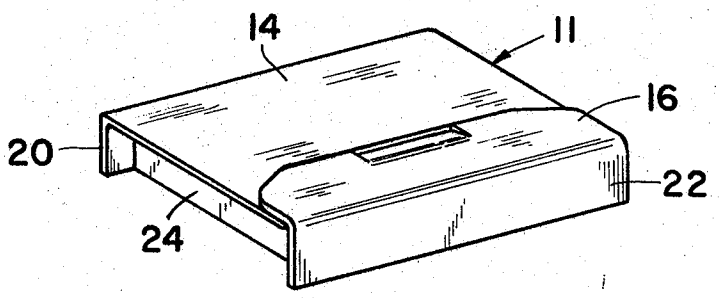

Fig. 4

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SELF-LOCKING PACKAGE WITH RECESSED END PORTIONS

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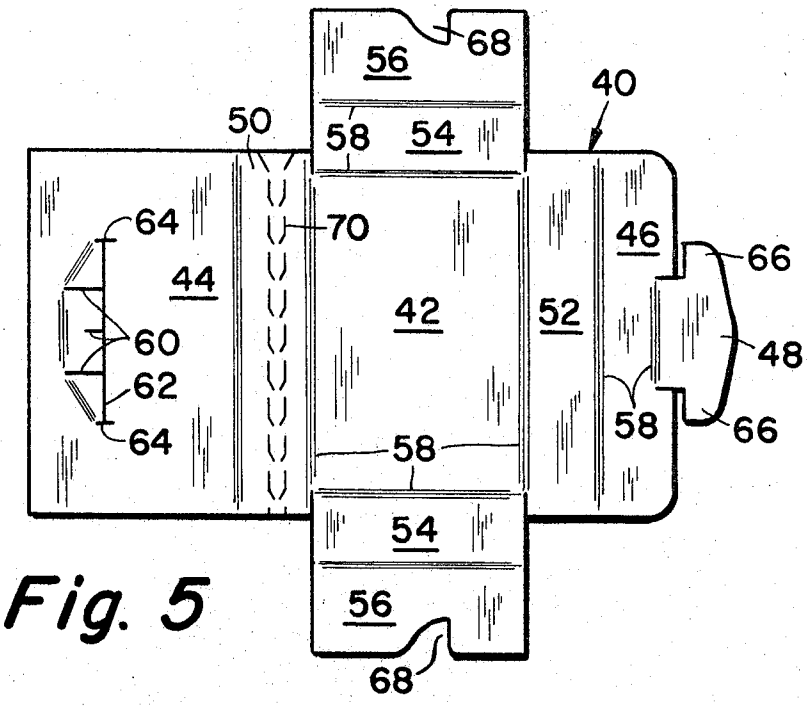

Fig. 5

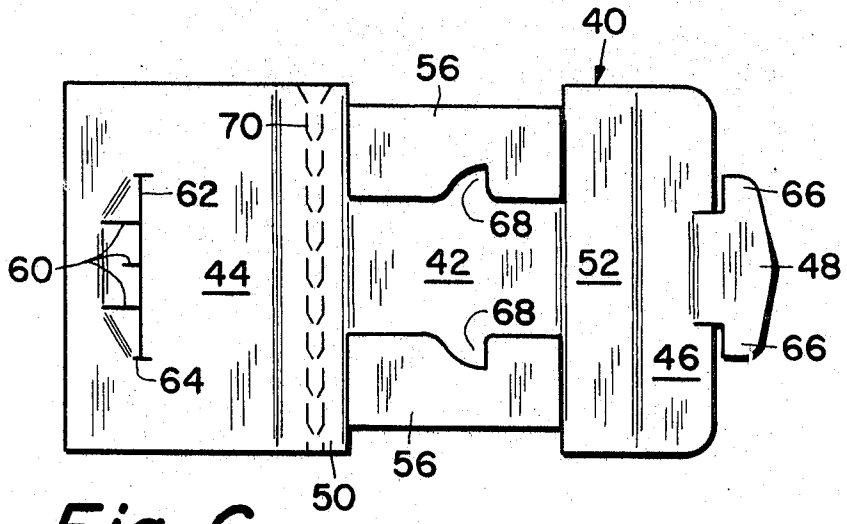

Fig. 6

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SELF-LOCKING PACKAGE WITH RECESSED END PORTIONS

Filed Dec. 23, 1968 3 Sheets-Sheet 3

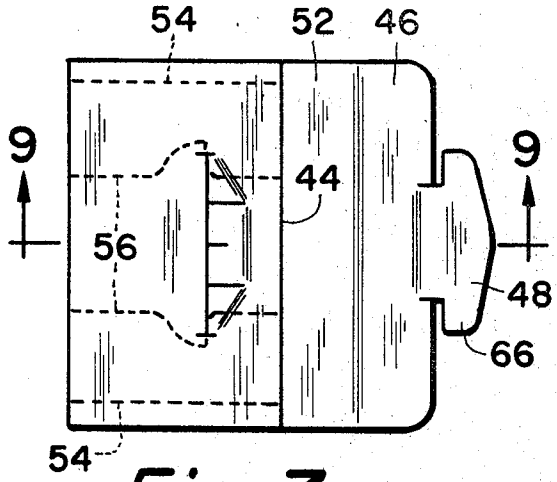

Fig. 7

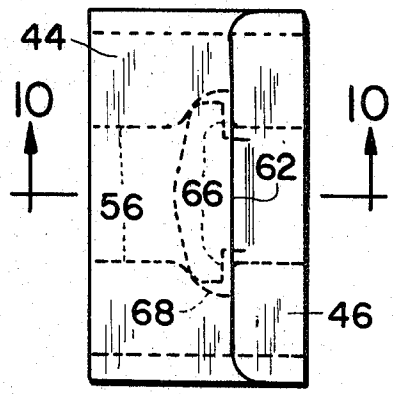

Fig. 8

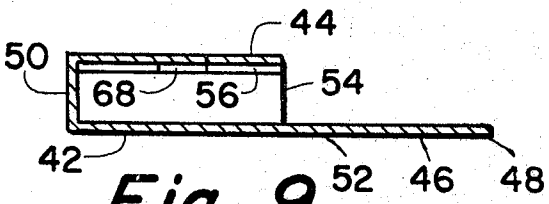

Fig. 9

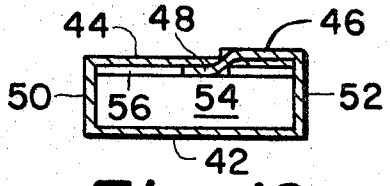

Fig. 10

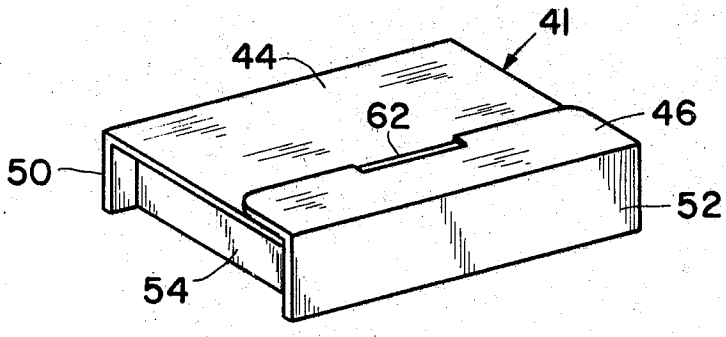

Fig. 11

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SELF-LOCKING PACKAGE WITH RECESSED END PORTIONS

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Int. Cl. B65d 5/06, 85/00
U.S. Cl. 229—40 9 Claims

ABSTRACT OF THE DISCLOSURE

A unitary self-locking container has a pair of integrally formed recessed end portions for protecting the packaged contents from direct impact.

BACKGROUND OF THE INVENTION

In the past it has been customary to package books and the like in padded containerized envelopes having suitable matting or corrugated protectors. More recently, it has been common to enclose individual books to be mailed within a folder or book wrapper which snugly circumscribes the book. An illustration of such known book wrapper is shown in U.S. Pat. No. 2,762,553 to Bentz.

Although the prior art devices function to protect the packaged book from minor scuffing and abrasion, they did not provide adequate protection against impact resulting from rough handling and abuse encountered in the postal system. As a result it was not uncommon for books packaged in the known manner to receive blunted or bent corners on their covers while in transit. The present invention overcomes these problems by providing shock-absorbing resistance to impact through the utilization of integrally formed recessed end portions.

SUMMARY OF THE INVENTION

A unitary blank of suitable material such as corrugated board, chip board, and the like is die cut and scored to form a book wrapper having recessed end walls which are locked in position by extended interior flaps, and an envelope flap engageable with a slotted front panel for self-locking the container in a manner satisfactory for mailing.

It thus has been an object of the present invention to provide an improved unitary mailable book wrapper having shock-absorbing recessed end portions which resist impact, and an easily-applied envelope-type closure flap for producing a self-locking arrangement sufficiently strong to maintain its locking characteristics when subjected to the abuses encountered during mailing.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top plan view of a blank for forming a self-locking package with recessed end portions.

FIG. 2 is an elevational view looking at the right end of FIG. 1, but with the recessed end panels in a vertical position with their retaining flaps in a horizontal position.

FIG. 3 is an elevational view similar to FIG. 2, but wth the front panel folded horizontally over the retaining flaps.

FIG. 4 is a perspective view of the self-locking package in a closed position.

FIG. 5 is a top plan view of a blank for forming a further embodiment of the present invention.

FIG. 6 is a top plan view of the blank shown in FIG. 5 with the recessed end panels in a vertical position and with their associated locking flaps in a horizontal position.

FIG. 7 is a view similar to FIG. 6 but with the front panel overlying the locking flaps.

FIG. 8 is a top plan view similar to FIG. 7 but with the locking flap in its closed position.

FIG. 9 is a cross-sectional view in elevation taken along line 9—9 of FIG. 7.

FIG. 10 is a cross-sectional view in elevation taken along line 10—10 of FIG. 8.

FIG. 11 is a perspective view of the further embodiment in a closed and locked position.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, and particularly FIGS. 1 through 4, a blank 10 for forming a self-locking package 11 with recessed end portions is shown having a back panel 12, a front panel 14, an envelope flap 16 having a locking tongue 18, a pair of side panels 20, 22, and a pair of recessed end panels 24 having retaining or locking flaps 26 extending therefrom. The various panels and flaps are joined together as a unitary structure by means of a plurality of crease lines 28.

The front panel 14 is provided with a plurality of slit portions 30, including a base slit line 32 terminating at its extremities in short end slits 34, which extend perpendicularly to the base slit so as to add flexibility to the slotted area formed by such slit portions. The locking tongue 18 has a pair of shoulder portions 36 which cooperate with the base slit 32 when the locking tongue is lockably positioned within slotted or slit portions 30. End panels 24 are formed partly out of back panel 12, and as a result front panel 14, side panels 20, 22 and envelope flap 16 are of a greater width than back panel 12.

When assembling the package 11 from the blank 10, the recessed end panels 24 are folded along crease lines 28 to a vertical position with respect to back panel 12, and their retaining or locking flaps 26 are also folded along their associated crease lines to a position parallel to the back panel (FIG. 2). Side panel 20 is then folded upwardly into abutting engagement with the end of recessed panels 24 and locking flaps 26, and front panel 14 is folded over locking flaps 26 so as to lie parallel to back panel 12 (FIG. 3.) Side panel 22 is then folded upwardly so as to abut an end portion of recessed panels 24 and locking flaps 26, and locking tongue 18 is depressed so as to engage slitted portions 30 as envelope flap 16 is folded over flap panel 14. The slitted portions 30 deform to facilitate the insertion of the locking tongue 18, such that shoulder portions 36 cooperate with the base slit 32 to lockably retain the envelope flap in a closed and locked position with respect to the front panel (FIG. 4). The locking action effected between the locking tongue and the slitted portion is of such magnitude that additional sealing means are not required, even for mailing purposes.

The depth or inward extent of retaining flaps 26 is greater than the height or depth of the recessed end panels 24, so as to effectively prevent the panels from sliding outwardly of the closed and locked package. That is, the greater extent of retaining flaps 26 cooperate with the back surface of the front panel 14 so as to maintain the end panels in a closed relationship with the front panel by forming a wedging or jamming action when such side panels are subjected to an outward force.

As shown in FIG. 4, the recessed end panels 24 are positioned inwardly of the outer ends of side panels 20, 22 and front panel 14. Accordingly, panels 24 produce recessed end portions which are protected against impact by end portions of panels 14, 20 and 22 which extend outwardly of the end panels. The recessed end portions are not only to protect the contents against impact damage occasioned during mailing, but also to protect corner portions of the packaged article from abrasion and scuffing during transit.

Referring now to FIGS. 5 through 11, a further blank **40** is shown for forming a modified self-locking package **41** embodying the present invention. The blank **40** is composed of a back panel **42**, a front panel **44**, an envelope flap **46** having a locking tongue **48**, a pair of side panels **50**, **52**, and a pair of recessed end panels **54** having retaining or locking flaps **56** extending therefrom. All of the flaps and panels are connected together as a unitary structure by means of crease lines **58**.

A plurality of slitted portions **60**, including a base slit line **62** terminating in end slits **64**, are provided in front panel **44** forming a slotted area. Locking tongue **48** has a pair of shoulder portions **66**, spaced apart from envelope flap **46** so as to cooperably engage with the base slit **62** when tongue **48** is lockably positioned within the slotted area formed by slits **60**. Locking flaps **56** are provided with recessed portions **68** so as to cooperably receive shoulder portions **66** when the locking tongue **48** is in its secured position, since locking flaps **56** extend inwardly a distance sufficient to intercept locking tongue **48**. Further, in order to facilitate the opening of the closed package, a tear strip **70** may be provided in side panel **50** if desired. End panels **54** are shown formed partly out of back panel **42**, and as a result side panels **50**, **52**, front panel **44**, and envelope flap **46** have a greater width than back panel **42**.

Blank **40** is assembled in the same manner as blank **10**, with the recessed end portion **54** being folded upwardly and locking flap **56** being folded inwardly over back panel **42** as shown in FIG. 6. Side panel **50** is then moved to an upward position in abutment with end portions of panels **54** and **56**, and front panel **44** folded to overlie panels **56** in a plane parallel to back panel **42**, as shown in FIGS. 7 and 9. Side panel **52** is then raised upwardly and locking tongue **48** depressed so that it operatively engages and projects within slit portion **60** as envelope flap **46** overlies the upper portion of front panel **44**. The shoulder portions **66** are accommodated within the recesses **68** of retaining flaps **56**, and cooperate with base slit **62** to lockably maintain the tongue portion in an operatively locked position within the slit portion, as shown in FIGS. 8 and 10.

The retaining or locking flaps **56** have a substantial inward extent to prevent recessed end panels **54** from being pushed outwardly of the closed package. Recessed portions **68**, formed in locking flaps **56**, are required to accommodate the shoulder portions **66** of locking tongue **48** when the height of recessed end panels **54** requires such an inward extension of retaining flaps **56** to provide an effective locking action. The tear tab **70** provides an easy access to the packaged contents, since the locking tongue **48** is not readily removable from slotted portion **60**. As noted particularly in FIG. 11, the recessed end panels **54** are protected from impact and abuse by end portions of surrounding panels **44**, **46**, **50** and **52**, which longitudinally extend outwardly of end panels **54**. Accordingly, edge portions of the packaged contents are protected from impact damage through the protective cushioning effect provided by the panels surrounding the recessed end portions.

Although the now preferred embodiment from the invention has been disclosed in detail, it will be apparent

to those skilled in the art that various changes and modifications may be made thereto without departing from the spirit and scope of the invention.

I claim:

1. A unitary blank for forming a self-locking package with recessed end portions which comprises, a back panel, a pair of side panels extending along and communicating with opposed side edges of said back panel, an envelope flap having a locking tongue portion foldably connected to one of said side panels and a front flap having slitted portions foldably connected to the other of said side panels, a pair of recessed end panels formed partially out of and along the full length of opposite end portions of said back panel, a retaining flap foldably secured to each of said recessed end panels, and the width of said side panels, front panel, and envelope flap being greater than the width of said back panel.

2. A unitary blank as defined in claim **1** wherein said retaining flaps have a depth greater than the depth of their associated recessed end panels.

3. A unitary blank as defined in claim **1** wherein a recessed portion is formed in the outer edge of each said retaining flap.

4. A unitary blank as defined in claim **1** wherein a tear strip is provided in one of said side panels.

5. A unitary blank as defined in claim **1** wherein said slit portions include a base slit having a pair of end slits extending perpendicular thereto at each terminal extent.

6. A unitary self-locking package having recessed end portions which comprises, a back panel, a front panel having slit portions, a pair of side panels, an envelope flap overlying said front panel and having a locking tongue positioned within said slit portions to retain the package in a closed assembly, a pair of recessed end panels communicating with opposite edge portions of said back panel; and said side panels, front panel and envelope flap having portions extending outwardly beyond said back panel and said end panels to form protected recessed end portions.

7. A package as defined in claim **6** including a retaining flap foldably connected to and of greater depth than each said recessed end panel, positioned in cooperative frictional engagement with an inner surface portion of said front panel.

8. A package as defined in claim **7** wherein each of said retaining flaps has a recessed portion which cooperably receives shoulder portions of said locking tongue.

9. A package as defined in claim **6** wherein said front panel, side panels, and envelope flap have a greater longitudinal extent than said bottom panel.

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U.S. Cl. X.R.

206—46