Nov. 22, 1960 W. G. ANDERSON, JR 2,961,144

PILFER-PROOF BOX

Filed July 21, 1958 3 Sheets-Sheet 1

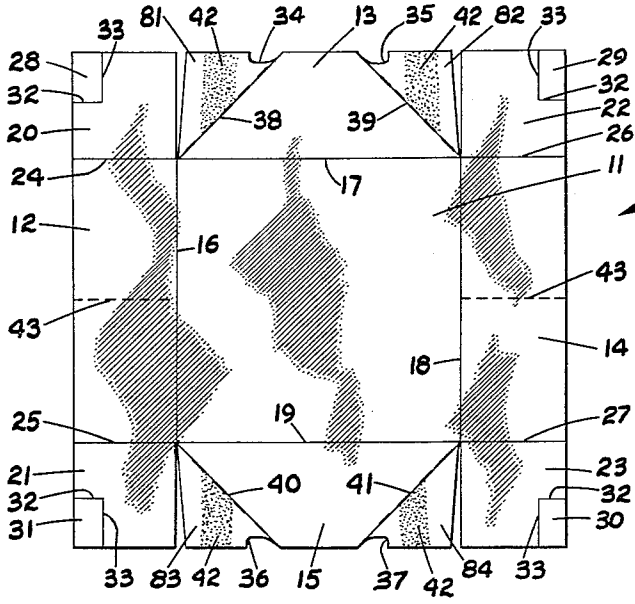


FIG. 1

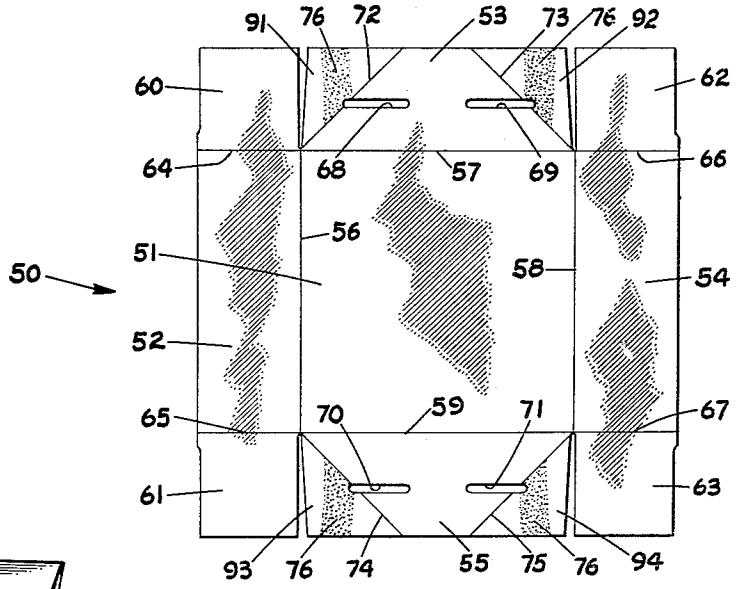


FIG. 2

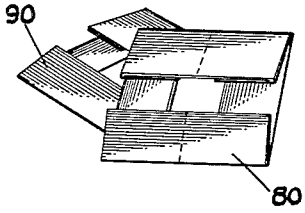


FIG. 3

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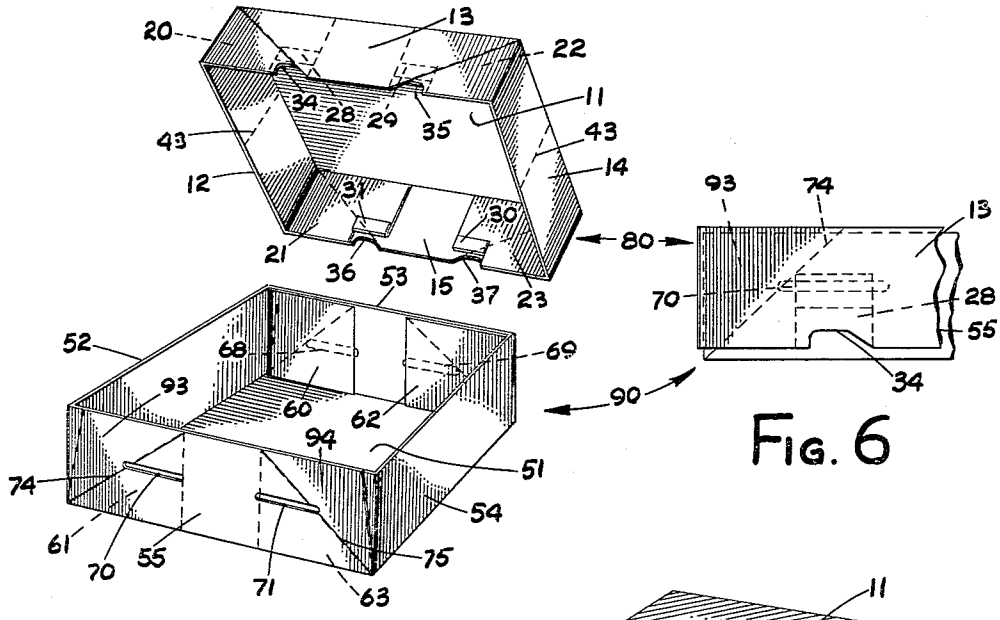


FIG. 6

FIG. 4

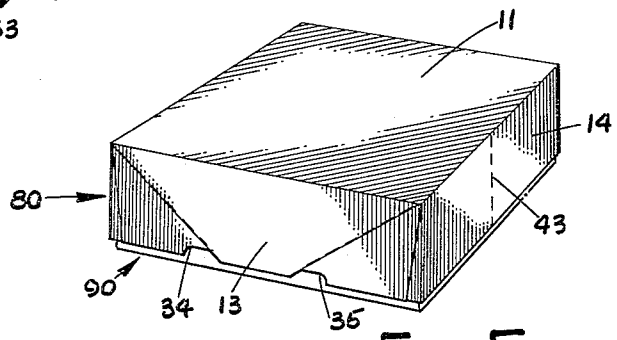


FIG. 5

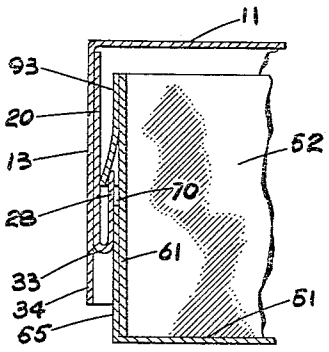


FIG. 7

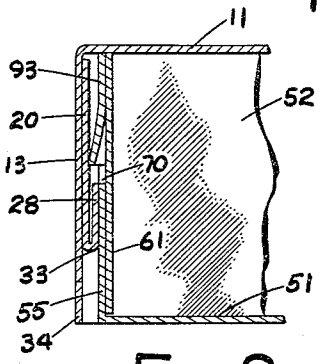


FIG. 8

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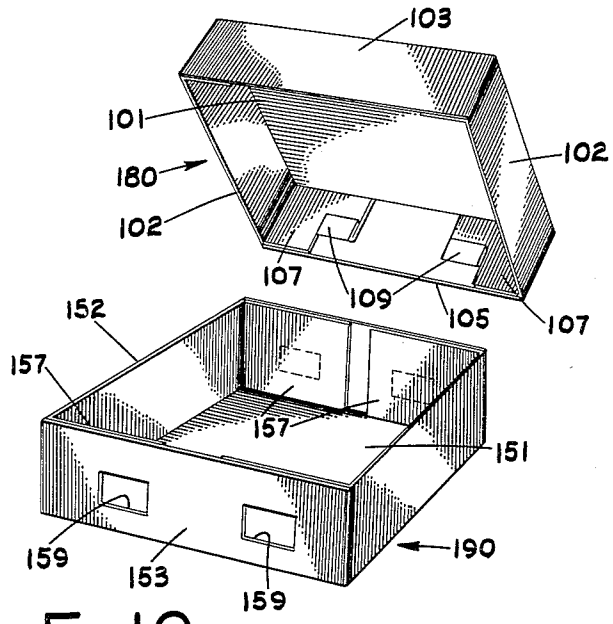
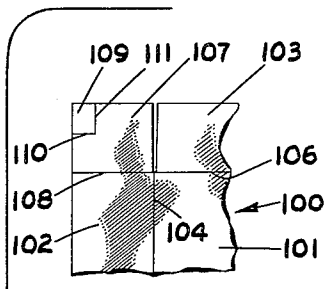


FIG. 10



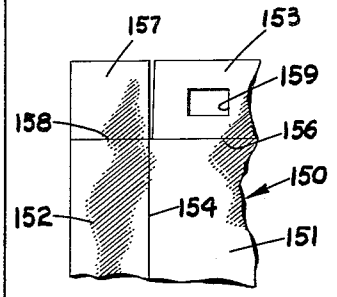


FIG. 9

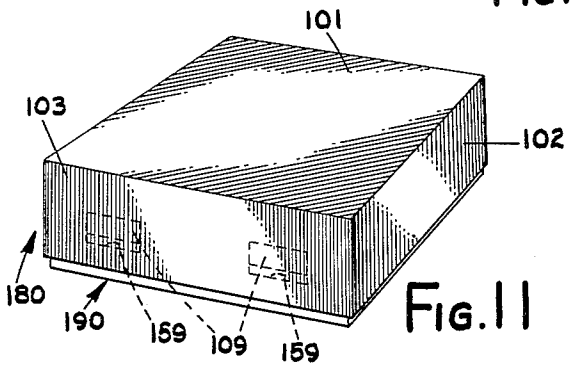


FIG. 11

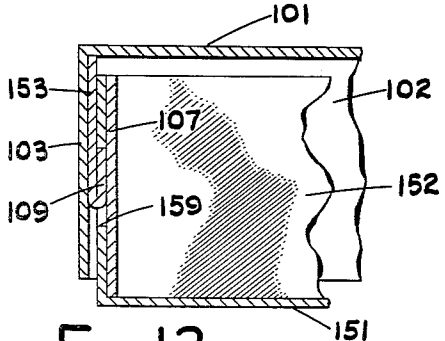


FIG. 12

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2,961,144

PILFER-PROOF BOX

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Filed July 21, 1958, Ser. No. 749,781

7 Claims. (Cl. 229—45)

This invention relates to pilfer-proof boxes and more particularly to a box construction having interlocking cover and container parts.

Certain goods, particularly consumable goods, are subject to pilfering in the course of their shipment from one place to another. It is highly desirable that such goods be packaged in pilfer-proof containers to both discourage persons from tampering with the goods and to eliminate the losses incident to pilfering.

A tamper-proof or pilfer-proof box must be reasonably inexpensive to provide. It must be simple to manufacture and to assemble. It is preferable that the pilfer-proof feature be included in making the box and that it is such as can be formed and handled by conventional box making and erecting equipment. It is also desirable that the locking feature be formed from the box material to avoid the cost incident to providing a different material and adding it to the box construction. It is still further advantageous to have a cover locking means which is optional; that is, which can be used or not used depending upon its need. It is also preferable to have a cover locking feature which is simple to operate and takes no particular skill or dexterity to manipulate.

It is the object of this invention to disclose a pilfer-proof box having each of the aforementioned advantages. The pilfer-proof feature is formed from the box materials and is provided for in the box blank forming operation. No special equipment is required and no additional steps or operations are necessary. The cover locking feature is readily available for use but need not be used unless needed. When inoperatively disposed it forms no obstruction in the normal closing of the box. As will be shown, the locking feature is extremely simple to operate and is disposed for quick and simple operation when required.

Another object of this invention is to disclose a cover locking feature for boxes which are foldable or collapsible and include manufacturer's glue joints so that they can be shipped to the site of use while flat and can be quickly erected for use.

Still another object of this invention is to disclose the simplicity with which the pilfer-proof locking feature can be incorporated within box forming blanks of either the erected or self-erecting type.

A further object of this invention is to disclose box forming blanks which include this locking feature.

These and other objects and advantages in the practice of this invention will be more apparent in the illustration and description of a working embodiment of the invention, as hereinafter set forth.

In the drawings:

Fig. 1 is a plan view of a cover forming blank including features of this invention.

Fig. 2 is a plan view of the container forming blank including features of this invention.

Fig. 3 is a small perspective view of the cover and container forming blanks of Figs. 1 and 2, as assembled and disposed in a folded or collapsed condition.

Fig. 4 is a perspective view of the cover and container forming blanks of Figs. 1–3 as erected and disposed for locking telescopic assembly.

Fig. 5 is a perspective view of the cover and container members as disposed together.

Fig. 6 is an enlarged front view of the corner of the cover and container members as disposed together and showing the locking feature in dotted outline.

Fig. 7 is an enlarged cross sectional side view through the cover and container members as disposed together, and showing the pilfer-proof locking feature in use.

Fig. 8 is an enlarged cross sectional side view through the cover and container members, as disposed together, and showing the pilfer-proof locking feature disposed for use.

Fig. 9 is a plan view of fragmentary parts of a different form of container and cover blank including the pilfer-proof feature of this invention.

Fig. 10 is a perspective view of the cover and container members made from the blanks of Fig. 9 and shown as erected and disposed for interlocking telescopic assembly.

Fig. 11 is a perspective view of the cover and container members of Fig. 10 as disposed together.

Fig. 12 is a cross sectional side view through the cover and container members of Fig. 11, and showing the pilfer-proof locking feature in use.

The pilfer-proof boxes of this invention are formed from separate flat blanks. One blank forms a container member and the other blank forms a cover member. Both blanks are simple in form and are easily provided without any appreciable scrap loss. One of the blanks is formed to include locking finger tabs which later cooperate with tab receiving apertures provided in the other blank. The blanks are readily formed to provide cover and container members. The locking tabs are disposed in a locking position just prior to the assembly of the cover and container members. However, the tabs need not be activated for use unless required.

Two different forms of pilfer-proof boxes are hereinafter described. One of the box forms is such as is made with manufacturer's glue joints and may be folded flat for shipment. The other box form is of the kind which is erected at the place where it is to be used. Both box forms include the pilfer-proof locking feature of this invention.

Referring to the drawings in further detail, a pilfer-proof box is provided by the cover forming blank **10** and the container forming blank **50** which, when assembled and erected, provide a cover member or section **80** and a container member or section **90**, respectively. These particular box forming members, **80** and **90**, are foldable or collapsible to the form shown by Fig. 3 and designated **80'** and **90'** for greater ease in shipment.

The cover forming blank **10** includes a cover wall panel **11**. Side wall forming panels **12**, **13**, **14** and **15** are connected to the cover wall panel **11** by fold or hinge lines **16**, **17**, **18** and **19**. End flaps **20** and **21** are provided on the ends of panels **12** and **14**. End flaps **22** and **23** are provided on the ends of panel **14**. The end flaps **20**, **21**, **22** and **23** are connected to the panels **12** and **14** by fold lines **24**, **25**, **26** and **27** respectively. Each of the end flaps **20**, **21**, **22** and **23** include a finger tab **28**, **29**, **30** and **31** respectively. The finger tabs are formed at the corners of the end flaps and are connected to the end flaps by fold lines **33**. They are separated from the end flaps by separation lines **32**.

The side wall panels **13** and **15** of the cover forming blank **10** include finger recesses or cutouts. Recesses **34** and **35** are provided in the side wall flap **13** and recesses **36** and **37** are provided in the side wall panel **15**. Fold lines **38** and **39** are provided across the corners of the side wall panel **13**. Fold lines **40** and **41** are pro-

vided across the corners of the side wall panel **15**. Glue areas **42** are provided in each of the corners of the side wall flaps **13** and **15**. The other side wall panels **12** and **14** include perforated separation lies **43** intermediate their ends.

The container forming blank **50** includes a bottom wall panel **51**. Side wall panels **52**, **53**, **54** and **55** are connected to the bottom wall panel **51** by fold or hinge lines **56**, **57**, **58** and **59**, respectively. The side wall panel **52** includes end wall flaps **60** and **61**. The side wall panel **54** includes end wall flaps **62** and **63**. The end wall flaps **60**, **61**, **62** and **63** are connected to their respective side wall panels by hinge lines **64**, **65**, **66** and **67** respectively. Elongated slots or apertures **68** and **69** are provided in the side wall panel **53**. Elongated slots or apertures **70** and **71** are provided in the side wall panel **55**. Fold lines **72** and **73** are formed across the corners of the side wall flap **53**. Fold lines **74** and **75** are formed across the corners of the side wall flap **55**. Each of the corner flaps of the side wall panels **53** and **55** include glue areas **76**.

The cover member or section **80** is formed in the following manner:

Side wall panels **13** and **15** are folded against the cover wall panel **11** on fold lines **17** and **19**. The corner areas **81** and **82** are folded back on the side wall panel **13** on lines **38** and **39**. The corner areas **83** and **84** are folded back on lines **40** and **41**. End flaps **20** and **21** are folded on lines **24** and **25** against panel **12**. The end flaps **22** and **23** are folded against panel **14** on fold lines **26** and **27**. Panel **12**, with folded end flaps **20** and **21**, is then folded against the cover wall **11** on fold lines **16**. The panel **14**, with the folded end flaps **22** and **23**, is folded against the cover wall panel **11** on fold line **18**. The glue areas **42** engage the corner areas **81**, **82**, **83** and **84** to the end flaps **20**, **22**, **21** and **23** respectively. The cover member is then in the form **80'** shown by Fig. 3. When erected to provide the cover member **80** the end flaps **20—23** frictionally engage the cover wall panel **11** and hold the side walls **12—15** normal to the cover wall flap **11** to provide the rectangular form shown.

The container blank **50** is assembled to the form **90'** shown by Fig. 3 and is erected to provide the container member or section **90** as shown by Fig. 4 in the following manner:

The side wall panels **53** and **55** are folded against the bottom wall panel **51** on fold lines **57** and **59**. The corner areas **91** and **92** of the side wall panel **53** are folded back on fold lines **64** and **65**. The corner areas **93** and **94** of the side wall panel **55** are folded back on lines **66** and **67**. End flaps **60** and **61** are folded against the side wall panel **52** on fold lines **64** and **65**. End flaps **62** and **63** are folded against the side wall panels **54** on fold lines **66** and **67**. Panel **52**, with the folded end flaps **60** and **61**, is then folded against the bottom wall panel **51** on fold line **56**. The panel **54**, with the end flaps **62** and **63** folded thereover, is folded on line **58** against the bottom wall panel **51**. The glue areas **76** cause the corner areas **91—93** to be engaged to the end wall flaps **60—63**.

The blank **50** as thus asembled is in the collapsed or folded form **90'** shown by Fig. 3. When erected, the end flaps **60—63** frictionally engage the bottom wall **51** to hold the side wall panels **52—55** normal to the bottom wall **51** and in the rectangular form shown by Fig. 4.

The container member or section **90** has the end flaps **60—63** covering the inner sides of the elongated slots or apertures **68—71**. Further, the secured corner areas **91—94** extend diagonally across the ends of the apertures **68—71**, and thereover.

The finger tabs **28—31** are activated to provide a pilfer-proof locking means for cover member **80** and container member **90**, when asembled together, in the following manner:

As the cover member **80** is disposed over the container member **90**, as shown in Fig. 4, the finger tabs **28—31** are folded back against their end flaps **20—23** on their fold lines **33**. The tabs then assume the positions shown in Fig. 4 and in dotted outline by Fig. 6. The finger tabs are readily accessible through the side wall panels **13** and **15** by means of the cutouts of finger recesses **30—33**. The finger tabs are displaced from the finger recesses **30—33** when they are folded back against their end flaps on the inside of the cover member.

The cover member **80** is telescoped over the container member **90** to provide the closed box structure shown by Fig. 5.

When the cover member **80** is disposed on the container member **90** the locking tabs are in the position of tab **28** shown by Fig. 8. When an attempt is made to separate the cover member **80** from the container member **90** the free end of the finger tabs **28—31** catch in the apertures **68—71**, as shown with the tab **28** in the aperture **70**, by Fig. 7. The disposition of the fold lines **72—75** cross the ends of the apertures **68—71** causes one end of the apertures to protrude slightly and to be in a position where it readily catches the free ends of the locking tabs. Also, the tendency of the finger tabs to spring back to their normal position guides them into the receiving apertures. Since the apertures **68—71** are backed by the end panels **60—63** there is no chance for the finger tabs to be extended through the apertures and allowed to assume their unfolded position. Furthermore, the ends of the finger tabs are stopped by the glued corner areas extending thereover, as shown by Fig. 6.

When it is desired to gain access to the container member it is necessary to break the cover member on the separation lines **43**.

It will be appreciated that when the finger tabs are left in their normal position extending down along the side walls of the container member, they form no obstruction to the assembly or disassembly of the cover member with the container member. In such instances the cover may be assembled and disassembled from the container member with ease.

In Figs. 9 and 12 there is shown another form of box which includes the locking feature of this invention.

The cover blank **100** and container blank **150** are very similar to the blanks **10** and **50** previously described. Therefore only the corner areas of each of the blanks will be described in order to point out the differences.

The cover forming blank **100** includes a cover panel **101** and has side wall panels connected to each edge thereof. Only the side wall panels **102** and **103** are shown in Fig. 9. These panels are connected to the cover panel by fold or hinge lines such as **104** and **106**. Opposite of the side wall panels **102** include end wall flaps **107**. The flap **107** is connected to the side wall panel as by a fold line **108**. Each flap includes a locking tab **109** connected to the end flap by a fold line **111** and separated therefrom on one side by a separation line **110**.

The container blank **150** includes a bottom wall panel **151**. It has side wall panels connected to each side edge, such as panels **152** and **153** shown by Fig. 9. These side wall panels are connected to the bottom wall panel by fold or hinge lines such as **154** and **156**. End flaps, as **157**, are connected to the end of each of the opposite side wall panels **152** as by a fold line **158**. Apertures, as **159**, are formed in opposite side wall panels, as **153**, near each end thereof.

The cover blank **100** when erected forms the cover member **180** shown in Fig. 10. The container blank **150** when erected forms the container member or section **190** shown by Fig. 10. The end flaps **107** are secured to the side wall panels **103** to provide the rectangular box shape shown. The locking tabs **109** are not secured to the side wall panels **103** in order that they can be folded back as shown by Fig. 10. Although this construction does not show any finger cutouts for access to the locking tabs, they are sufficiently accessible by curling one's fingers around the side edge of the side wall panels.

The end flaps 157 of the container blank 150 will be noted to close one side of the apertures 159. It will also be noted that the apertures 159 are rectangular in shape rather than elongated as in the first form disclosed. When the cover member 180 is telescoped over the container member 190, with the locking tabs 109 disposed in locking position, the tabs will snap into the apertures 159 to provide a pilfer-proof lock which cannot be broken except by destroying the cover member.

As in the first box construction described, the cover member may be assembled and disassembled from the carton member with relative ease when the locking tabs are not folded back in their locking position. However when the four locking tabs are received within the tab receptive apertures 159 the cover and container members are securely locked together.

While a preferred embodiment of this invention has been described, it will be understood that other modifications and improvements may be made thereto. Such of these modifications and improvements as incorporate the principles of this invention are to be considered as included in the hereinafter appended claims unless these claims by their language expressly state otherwise.

I claim:

1. A self-locking carton comprising: a first section and a second section, each having an open face, a closed face and four sides; said first section being adapted to telescope over said second section; each of said sections having a pair of oppositely disposed side panels; each of said side panels having a pair of end flaps foldably joined thereto; each of said sections having end panels; said side panels and end panels of each section together forming a rectangle with said end flaps seated against the inner surface of said end panels; spaced slots in said end panels of said first section intermediate of and elongated parallel to the edges thereof; said end flaps overlying at least a portion of each of said slots and at least a portion of said end flaps between said slots and the open face of said first section being fixedly secured to said end panel, said end flaps of said second section being slit, said slits opening through the open face of said second section for defining fingers foldably jointed to said end flaps and normally lying in the planes of said end flaps, said fingers being inwardly foldable to lie against the inner faces of said end flaps with their free ends extending away from the open face of said second section for entering said slots in said first section when said sections are telescopically assembled to resist separation thereof.

2. A self-locking carton comprising: a first section and a second section, each having an open face, a closed face and four sides; said first section being adapted to telescope over said second section; each of said sections having a pair of oppositely disposed side panels; each of said side panels having a pair of end flaps foldably joined thereto; each of said sections having end panels; said side panels and end panels of each section together forming a rectangle with said end flaps seated against the inner surface of said end panels; a slot in each of said end panels of said first section intermediate of and elongated parallel to the edges thereof; the adjacent of said end flaps overlying at least a portion of each of said slots and at least a portion of said end flaps between said slots and the open face of said first section being fixedly secured to said end panel, one of said end flaps at each end of said second section being slit, said slits opening through the open face of said second section for defining fingers foldably joined to said end flaps and normally lying in the planes of said end flaps; said fingers being inwardly foldable to lie against the inner faces of said end flaps with their free ends extending away from the open face of said second section for entering said slots in said first section when said sections are telescopically assembled to resist separation thereof.

3. A self-locking carton comprising: a first section and a second section each having an open face, a closed face and four sides, said first section being adapted to telescope over said second section; each of said sections having a pair of oppositely disposed side panels; each of said side panels having a pair of end flaps foldably joined thereto; each of said sections having end panels; said side panels and end panels of each section together forming a rectangle with said end flaps seated against the inner surface of said end panels; a slot in each of said end panels of said first section intermediate of and elongated parallel to the edges thereof; said end flaps and said end panels each having an inclined fold line starting at the juncture of said end flaps and said side panels adjacent the closed face of said first section and extending to the open face of said first section whereby said sides may be joined and folded flat for storage; said fold lines crossing said slots; the portions of said end flaps between said fold lines and the open face of said first section being firmly secured to said end panels; one of said end flaps at each end of said second section being slit, said slits opening through the open face of said second section for defining fingers foldably joined to said end flaps and normally lying in the plane of said end flaps; said fingers being inwardly foldable to lie against the inner faces of said end flaps with their free ends extending away from the open face of said second section for entering said slots in said first section when said sections are telescopically assembled and engaging the stop formed by the securement of said portions of said end flaps to said end panels to resist separation thereof.

4. A self-locking box, comprising: a cover member and a container member received together in telescoping relation and being selectively interlocked, said cover member including four side walls and a cover wall and having oppositely disposed of its side walls formed to include end flaps overlapping and secured at least in part to the inner sides of its other side walls, said end flaps of said cover member having finger tabs formed from the ends thereof and foldable against the sides thereof within said cover member, said container member including four side walls and a bottom wall and having oppositely disposed of its side walls formed to include tab receiving apertures therein, the other of said container side walls being formed to include end flaps overlapping and secured at least in part to the inner sides of said oppositely disposed container side walls and covering said apertures on the inner sides thereof, and said cover member being received in removable telescoping relation to said container member with said finger tabs in a non-folded condition, and in locked telescoping relation to said container member with said finger tabs folded over and received at least in part within said tab receiving apertures and prevented from extending therethrough by said operative closing end flaps.

5. The combination of a pair of box forming blanks for providing a self-locking box, and comprising: a cover forming blank including a cover wall panel having side wall panels hinged to each edge thereof, end flaps hinged to the ends of oppositely disposed of said side wall panels, and foldable finger tabs provided at the outer free ends of each of said end flaps, said end flaps being securable at least in part to the other of said side wall panels in the erection of said cover blank and said finger tabs being foldable against said end flaps within the cover member formed thereby, and a container forming blank including a bottom wall panel having side wall panels hinged to each edge thereof, finger tab receiving apertures formed within oppositely disposed of said container blank side wall panels, and end flaps hinged to the ends of said other container blank side wall panels, said container blank end wall flaps being securable at least in part to said oppositely disposed container blank side wall panels for closing the inner sides of said finger tab receiving apertures upon the erection of said container blank, and said cover and container blanks being formed of com-

plementary sizes for telescoping interrlation following the erection of said blanks.

6. The combination of a pair of box forming blanks for providing a self-locking box, and comprising: a cover forming blank including a cover wall panel having side wall panels hinged to each edge thereof, end flaps hinged to the ends of oppositely disposed of said side wall panels, and foldable finger tabs provided at the outer free ends of each of said end flaps, said other cover blank side wall panels including cutouts at the side edges thereof for exposing the unfolded free ends of said finger tabs following the erection of said cover blank, said end flaps being securable at least in part to the other of said side wall panels in the erection of said cover blank and said finger tabs being accessible through said cutouts and foldable against said end flaps within the cover member formed thereby, and a container forming blank including a bottom wall panel having side wall panels hinged to each edge thereof, finger tab receiving apertures formed within oppositely disposed of said container blank side wall panels, and end flaps hinged to the ends of said other container blank side wall panels, said container blank end wall flaps being securable at least in part to said oppositely disposed container blank side wall panels for closing the inner sides of said finger tab receiving apertures upon the erection of said container blank, and said cover and container blanks being formed of complementary sizes for telescoping interrelation following the erection of said blanks.

7. The combination of a pair of box forming blanks for providing a self-locking box, and comprising: a cover forming blank including a cover wall panel having side wall panels hinged to each edge thereof, end flaps hinged to the ends of oppositely disposed of said side wall panels,

and foldable finger tabs provided at the outer free ends of each of said end flaps, said end flaps being securable at least in part to the other of said side wall panels in the erection of said cover blank and said finger tabs being foldable against said end flaps within the cover member formed thereby, and a container forming blank including a bottom wall panel having side wall panels hinged to each edge thereof, finger tab receiving apertures formed within oppositely disposed of said container blank side wall panels, and end flaps hinged to the ends of said other container blank side wall panels, said container blank end wall flaps being securable at least in part to said oppositely disposed container blank side wall panels for closing the inner sides of said finger tab receiving apertures upon the erection of said container blank, said cover and container blanks each having the free corners of the end-flap-free side wall panels thereof including a fold line thereacross and being receptive of a glue surface on said corners for providing collapsible cover and container members upon being secured to said end flaps in the forming of such cover and container members from said blanks, and said cover and container blanks being formed of complementary sizes for telescoping interrelation following the erection of said blanks.

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