

July 5, 1938.

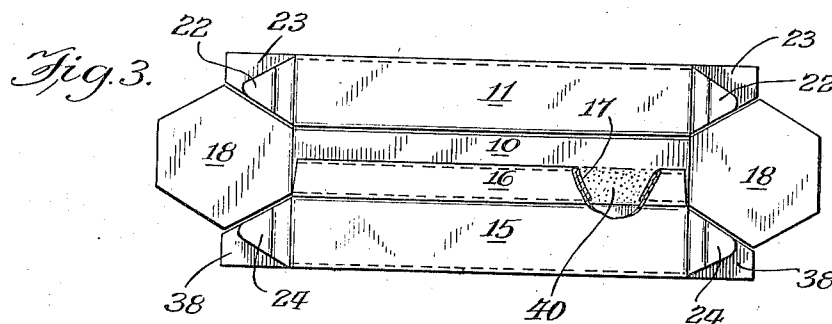
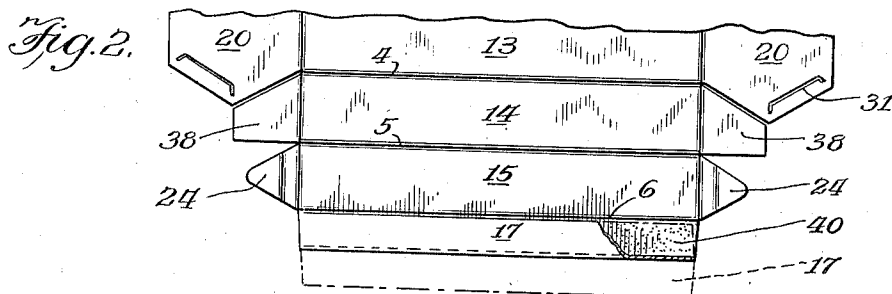
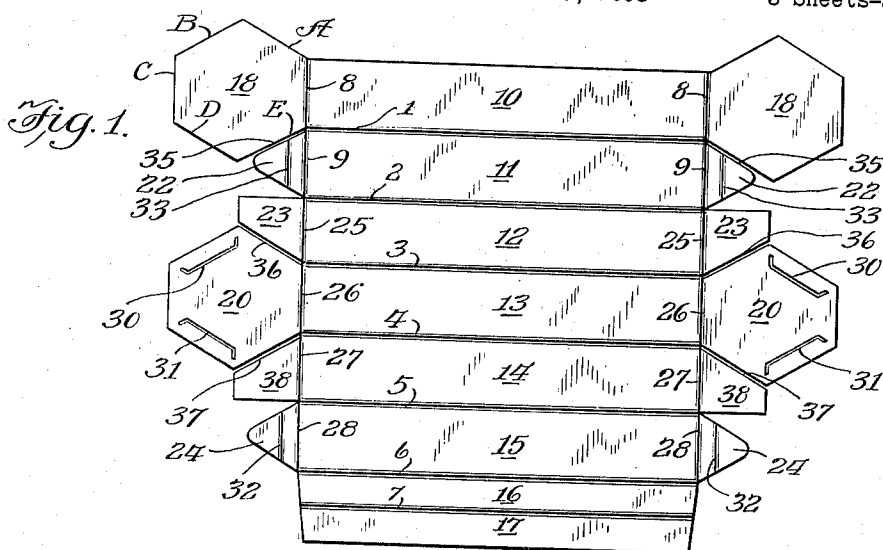
D. A. SNYDER

2,123,147

HEXAGONAL CARTON

Filed Jan. 3, 1938

3 Sheets-Sheet 1



July 5, 1938.

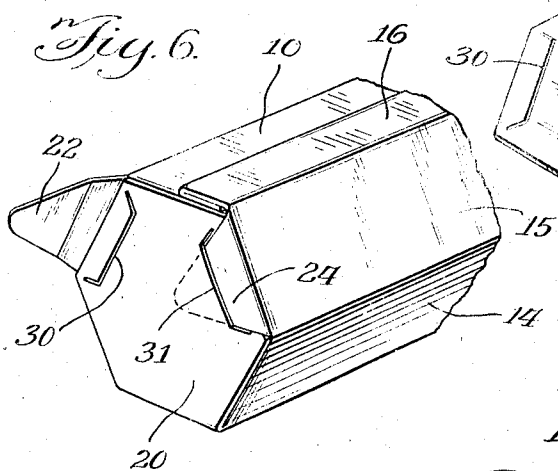
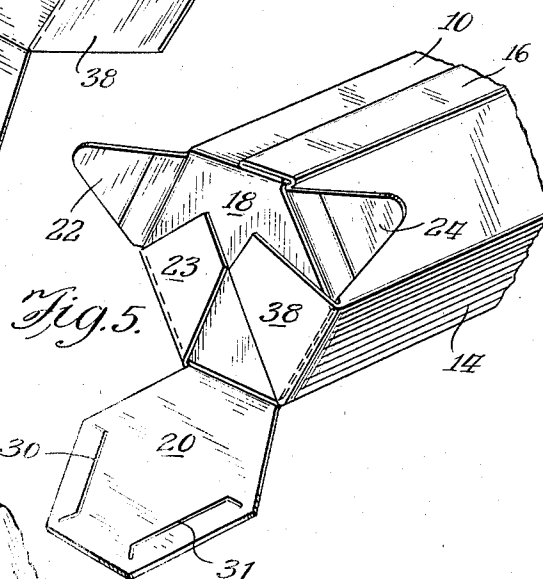
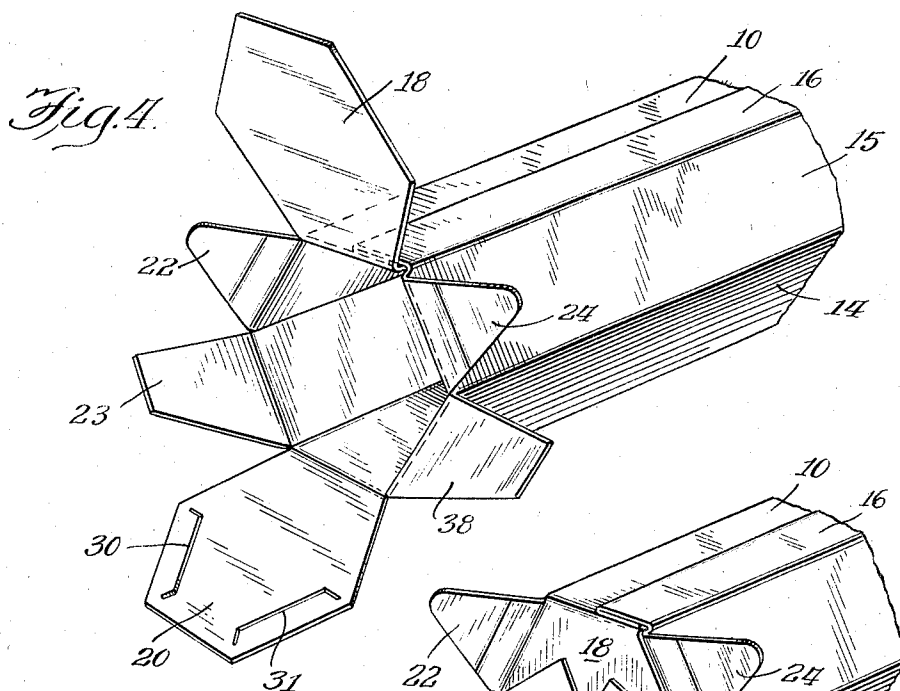
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HEXAGONAL CARTON

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3 Sheets-Sheet 2



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HEXAGONAL CARTON

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3 Sheets-Sheet 3

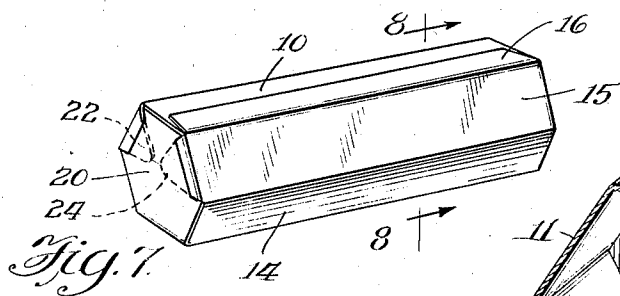


Fig. 7.

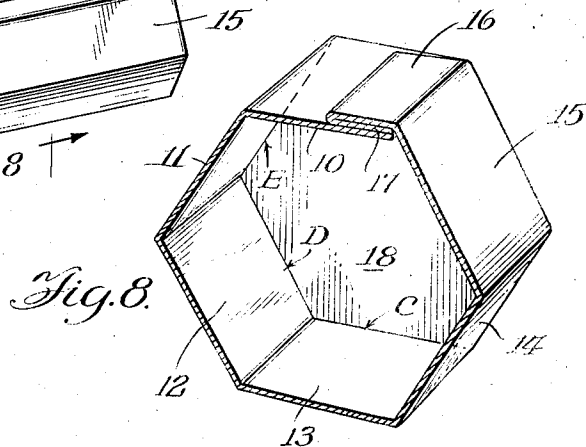


Fig. 8.

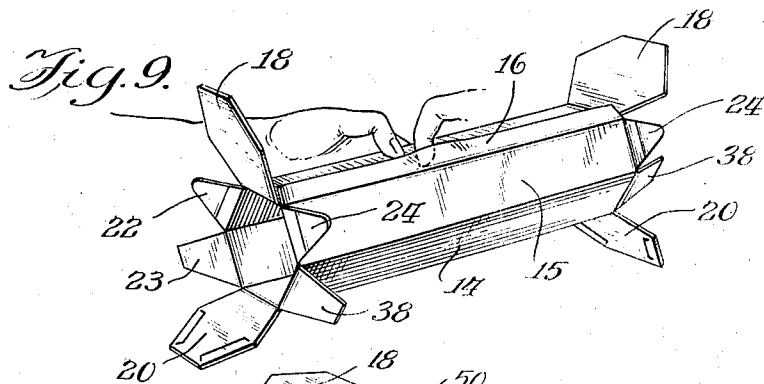


Fig. 9.

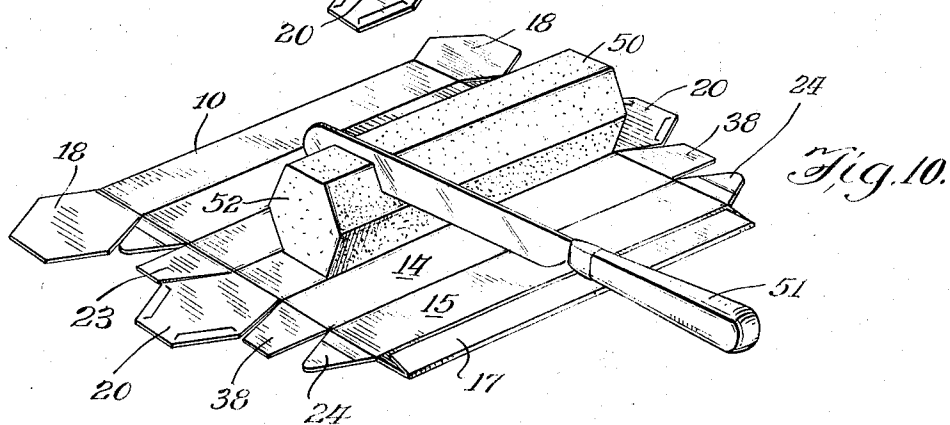


Fig. 10.

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UNITED STATES PATENT OFFICE

2,123,147

HEXAGONAL CARTON

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10 Claims. (Cl. 229—39)

This invention relates to cartons or boxes, and more particularly to such containers as are made from unitary blanks of foldable material.

One of the objects of the present invention is to provide a novel carton which may be formed from a unitary piece of foldable material, the carton blank being readily formed by a suitable die and its elements being easily foldable into proper relation to form the complete carton.

Another object is to provide a carton of hexagonal cross-section which may be easily and economically formed from a unitary blank of foldable material.

A still further object of this invention is to provide improved means for fastening the end closure flaps against displacement.

Another object of this invention resides in the improved construction of the ends of such a container, which will effectively seal the container against leakage and at the same time permit easy operation of the opening and closing of the same.

A further object is to provide a container of the character aforesaid which may be shipped in flat knocked-down condition by the manufacturer to the user and set up by the latter preparatory to placing the goods in it without the use of special equipment, adhesives or the like.

A still further object is to provide an integral carton blank of novel shape which may be quickly and easily folded to form a carton of hexagonal cross-section.

These and other objects will appear more fully from a consideration of the detailed description of the invention which follows. Although only one embodiment of the invention has been described and illustrated in the accompanying drawings, it is to be expressly understood that these drawings are for the purpose of illustration only and are not to be construed as a limitation of the scope of the invention, reference being had for this purpose to the appended claims.

In the drawings:

Figure 1 is a plan view of one form of blank from which a carton may be constructed in accordance with the present invention,

Figure 2 is a fragmental view of the blank shown in Figure 1 having one panel folded over and glued,

Figure 3 is a plan view of the completed carton folded flat for shipment,

Figure 4 is a fragmental perspective view of the carton with the closure flaps in extended open position,

Figure 5 is a fragmental perspective view of the

carton showing the inner closure flap in closed position,

Figure 6 is a fragmental perspective view showing the outer closure flap in partially locked condition,

Figure 7 is a perspective view of the closed carton,

Figure 8 is a sectional view taken on lines 8—8 of Figure 7,

Figure 9 is a perspective view illustrating the opening of the carton,

Figure 10 is a perspective view illustrating the carton in flat opened position supporting a block of ice cream frozen in the carton.

Referring now to the drawings, wherein like reference characters indicate like parts throughout the several views, there is disclosed therein a carton or box which is made from a unitary blank of novel shape, the various elements of the blank being readily foldable to form the complete carton and suitable means being provided for quickly and easily sealing said elements in assembled relationship. As shown, the carton is preferably formed from a unitary blank of any suitable foldable material such as cardboard, having a substantially rectangular body portion suitably scored transversely along the lines 1, 2, 3, 4, 5, 6 and 7 in order to form a plurality of panels 10, 11, 12, 13 and 14 which form the sides of the carton when it is assembled, and panels 16 and 17, constituting a securing or pasting flap. Panel 17 of the pasting flap is adapted to be folded back on itself on score line 7 in the position shown in Figure 2 having one face thereof glued to panel 16 by adhesive 40. The outer face of panel 17 is adapted to be coated with a suitable adhesive and secured to the outer surface of the opposite end panel 10 as shown in Figure 3 to form the completed carton. If desired, the pasting flap may be formed of a single panel instead of being folded back on itself. In the preferred form shown, the body portion of the blank includes six rectangular panels of equal size for forming a carton having a hexagonal cross-section, but it will be understood that the invention is not limited to cartons having rectangular sides, or even to sides all of the same size.

In addition to the body portion comprising the panels forming the sides of the carton, the blank is also provided with suitable appendages which are adapted to form the end closures of the carton and which include suitable means for easily and quickly sealing said closures in place. In the form shown, one of the panels intermediate end panels such as panel 13 is scored at its extremi-

ties as indicated at 26, beyond which score lines the panel is provided with a pair of end flaps 20. In the embodiment shown, end flaps 20 are hexagonal in shape and substantially equal in area to the cross-section of the assembled carton, and are adapted to form the outer end closures therefor. In order that these end closures may be easily and quickly locked in place, end flaps are provided with slits 30 and 31 which are adapted to receive locking tongues 22 and 24 provided, respectively, at the ends of panels 11 and 15 hinged thereto on score lines 9 and 28, respectively. Tongues 22 and 24 are provided, respectively, with score lines 33 and 32 to facilitate flexing of the tongues for insertion in slits 30 and 31 of the end closures.

In addition to the outer end closure flaps, just described, suitable means have also been provided for furnishing the carton with inner end closure flaps in order to insure a thoroughly tight, leak-proof container especially well adapted for containing ice cream or other comestibles which may be placed in the carton in liquid or semi-frozen condition and then hardened therein so as to assume the contour of the carton. In the embodiment shown end panel 10 is scored at its extremities as indicated at 8, beyond which score lines said panel is provided with a pair of inner closure flaps 18. These inner flaps are also hexagonal in shape and of the same size and area as end flaps 20, and equal in area to the cross-section of the assembled carton.

In order to retain the inner flaps in position when the carton is set up, panels 12 and 14 are provided with score lines 25 and 27 respectively, beyond which are polygonal flaps 23 and 38, respectively. The said flaps are also free from end closures 20 owing to slits 36 and 37.

In forming the carton for shipping in flat condition to the user, panel 17 is folded back on score line 7 and glued to panel 16 by adhesive 40, as shown in Figure 2. Panel 11 is then folded on score line 2, as shown in Figure 3, carrying with it end panel 10. The outer exposed face of the folded-over panel 17 is then glued by adhesive 40 to the marginal portion of end panel 10 as shown in Figure 3. The outer and inner flaps 20 and 18 will then be in superimposed position as shown in Figure 3 and tongues 22 and 24 will be superimposed upon tetragonal flaps 23 and 38, respectively. The carton is shipped to the user in this flat condition.

In using the carton for packaging ice cream or other comestibles therein, the body of the carton is folded along score lines 1, 2, 3, 4, 5 and 6 to form a hexagonal body portion, as shown in Figure 4, with the end flaps in extended position. An inner flap 18 at one end of the carton is then folded on score line 8 to close the end of the carton, as shown in Figure 5. Tetragonal flaps 23 and 38 are then folded over the inner flap. The end closure flap 20 is then folded over on score line 26 to overlie the inner closure flap, as shown in Figure 6. Tongues 22 and 24 are then inserted in slits 30 and 31, respectively, thereby locking one end of the carton. The carton is then placed on its closed end and filled at its open end with liquid or semi-liquid ice cream or other comestible. The inner and outer closure flaps at the open end of the carton are then locked into position in the same order as previously described and the carton with its contents is then placed in a freezing chamber to harden the contents therein, causing the contents to assume the hexagonal contour of the carton.

The construction of the carton is such as to provide a smooth continuous interior surface throughout. The ends of the carton are also smooth internally as shown in Figure 8. During the filling operation no leakage will occur at the edges A, B, C, D and E at the inner flaps owing to the manner in which the closure flaps are constructed and retained in position.

When the consumer desires to use the contents in the carton, the exposed edge of panel 16 is seized and pulled back with the fingers, as shown in Figure 9, thereby breaking the adhesive bond of the folded-back panel 17 to the margin of panel 10. Owing to the bent panel 17, the carton is readily opened without tearing or peeling the fibres on the inner face of the carton. The carton will open up in substantially flat condition as shown in Figure 10, and will support the ice cream or other comestible thereon which can be sliced into slices of hexagonal contour for individual servings.

There is thus provided by the present invention a novel form of box or carton made from a unitary blank of foldable material which is provided with both inner and outer end closures and novel sealing means for providing a tight, leak-proof container especially well adapted for containing frozen comestibles. The blank from which the carton is formed comprises a single piece of foldable material of novel shape suitably scored for quick and easy folding into the desired form. Both inner and outer end closures are provided, the inner end closures forming a smooth interior. When folded to assembled form, every external edge of the carton is provided with a complete, continuous covering so as to effectively prevent leakage. The carton thus formed is simple in structure, and inexpensive of manufacture both as to material and the labor of assembly.

It will be obvious that the invention is not limited to the specific form described and illustrated in the accompanying drawings, but is capable of a variety of mechanical embodiments. For example, the panels forming the sides of the carton may be of any desired shape and size instead of rectangular and equal as shown, and the closure flaps may be secured to any of the panels in any desired arrangement other than that illustrated. Also, it will be understood that the carton may be constructed in accordance with the present invention with a different number of sides than six, and that the closure flaps may accordingly vary in cross-section from the hexagonal form shown. Various other changes, which will now appear to those skilled in the art, may be made in the form, details of construction and arrangement of the parts without departing from the spirit of the invention, and reference is therefore to be had to the appended claims for a definition of the limits of the invention.

I claim:

1. An integral blank of foldable material for forming a hexagonal carton, comprising a body portion having six panels for forming the sides of the carton, hexagonal inner closure flaps extending from each end of one of said panels and forming inner end closures for the ends of the carton, polygonal flaps extending from each end of two other of said panels, said polygonal flaps being adapted to be folded over into face contact with the said inner closure flaps, hexagonal outer closure flaps extending from each end of another of said panels, said outer closure flaps being provided with slits for receiving locking tongues, and locking tongues extending from each end of two

other of said panels adapted to be inserted in said slits for locking the outer closure flaps.

2. An integral blank of foldable material for forming a hexagonal carton, comprising a body portion having a rectangular terminal panel and five adjacent rectangular panels forming the sides of the carton, hexagonal inner closure flaps extending from each end of the said terminal panel and forming inner end closures for the ends of the carton, a pasting flap hinged to the opposite terminal panel adapted to be glued to the marginal portion of said first terminal panel, polygonal flaps extending from each end of two other of said panels, said polygonal flaps being adapted to be folded over into face contact with the said inner closure flaps, hexagonal outer closure flaps extending from each end of another of said panels, said outer closure flaps being provided with slits for receiving locking tongues, and locking tongues extending from each end of two other of said panels adapted to be inserted in said slits for locking the outer closure flaps.

3. An integral blank of foldable material for forming a hexagonal carton, comprising a body portion having a first terminal panel, a second adjacent panel, a third adjacent panel, a fourth adjacent panel, a fifth adjacent panel, and a second terminal panel adjacent said fifth panel for forming the sides of the carton, hexagonal inner closure flaps extending from each end of the said first terminal panel and forming inner end closures for the ends of the carton, polygonal flaps extending from each end of the said third and fifth panels, said polygonal flaps being adapted to be folded over into face contact with the said inner closure flaps, hexagonal outer closure flaps extending from each end of the said fourth panel, said outer closure flaps being provided with slits for receiving locking tongues, and locking tongues extending from each end of said second panel and said second terminal panel adapted to be inserted in said slits for locking the outer closure flaps.

4. An integral blank of foldable material for forming a hexagonal carton, comprising a body portion having a first terminal panel, a second adjacent panel, a third adjacent panel, a fourth adjacent panel, a fifth panel and a second terminal panel adjacent said fifth panel for forming the sides of the carton, a pasting flap hinged to the said second terminal panel adapted to be glued to the marginal portion of the said first terminal panel, hexagonal inner closure flaps extending from each end of the said first terminal panel and forming inner end closures for the ends of the carton, polygonal flaps extending from each end of the said third and fifth panels, said polygonal flaps being adapted to be folded over into face contact with the said inner closure flaps, hexagonal outer closure flaps extending from each end of the said fourth panel, said outer closure flaps being provided with slits for receiving locking tongues, and locking tongues extending from each end of said second panel and said second terminal panel adapted to be inserted in said slits for locking the outer closure flaps.

5. An integral blank of foldable material for forming a hexagonal carton, comprising a body portion having a first terminal panel, a second adjacent panel, a third adjacent panel, a fourth adjacent panel, a fifth adjacent panel and a second terminal panel adjacent said fifth panel for forming the sides of the carton, a pasting flap hinged to said second terminal panel, the marginal portion of said pasting flap being folded back on itself and secured to said pasting flap, the exposed

face portion of said marginal portion being glued to the exposed marginal portion of the said first terminal panel to provide a grasping portion for opening the carton, hexagonal inner closure flaps extending from each end of the said first terminal panel and forming inner end closures for the ends of the carton, polygonal flaps extending from each end of the said third and fifth panels, said polygonal flaps being adapted to be folded over into face contact with the said inner closure flaps, hexagonal outer closure flaps extending from each end of the said fourth panel, said outer closure flaps being provided with slits for receiving locking tongues, and locking tongues extending from each end of said second panel and said second terminal panel adapted to be inserted in said slits for locking the outer closure flaps.

6. A carton formed from an integral blank of foldable material including a body portion having a terminal panel and five adjacent panels for forming the sides of the carton, hexagonal inner closure flaps extending from each end of said terminal panel and forming inner end closures for the ends of the carton, a pasting flap hinged to the opposite terminal panel and secured to the marginal portion of said first terminal panel, polygonal flaps extending from each end of two other of said panels, said polygonal flaps being adapted to be folded over into face contact with the said inner closure flaps, hexagonal outer closure flaps extending from each end of another of said panels, said outer closure flaps being provided with slits for receiving locking tongues, and locking tongues extending from each end of two other of said panels adapted to be inserted in said slits for locking the outer closure flaps, thereby providing internally continuous walls and a substantially leak-proof construction.

7. A carton formed from an integral blank of foldable material including a body portion having a first terminal panel, a second adjacent panel, a third adjacent panel, a fourth adjacent panel, a fifth adjacent panel, and a second terminal panel adjacent said fifth panel for forming the sides of the carton, hexagonal inner closure flaps extending from each end of the said first terminal panel and forming inner end closures for the ends of the carton, polygonal flaps extending from each end of the said third and fifth panels, said polygonal flaps being adapted to be folded over into face contact with the said inner closure flaps, hexagonal outer closure flaps extending from each end of the said fourth panel, said outer closure flaps being provided with slits for receiving locking tongues, and locking tongues extending from each end of said second panel and said second terminal panel adapted to be inserted in said slits for locking the outer closure flaps, thereby providing internally continuous walls and a substantially leak-proof construction.

8. An integral blank of foldable material for forming a hexagonal carton, comprising a body portion having a first terminal panel, a second adjacent panel, a third adjacent panel, a fourth adjacent panel, a fifth adjacent panel, and a second terminal panel adjacent said fifth panel for forming the sides of the carton, hexagonal inner closure flaps extending from each end of the said first terminal panel and forming inner end closures for the ends of the carton, polygonal flaps extending from each end of the said third and fifth panels, said polygonal flaps being adapted to be folded over into face contact with

the said inner closure flaps, hexagonal outer closure flaps extending from each end of the said fourth panel, said outer closure flaps being provided with slits for receiving locking tongues, and locking tongues extending from each end of said second panel and second terminal panel adapted to be inserted in said slits for locking the outer closure flaps, said locking tongues being scored to facilitate insertion in said slits.

9. An integral blank of foldable material for forming a polygonal carton, comprising a body portion having a plurality of panels for forming the sides of the carton, polygonal inner closure flaps extending from each end of one of said panels and forming inner end closures for the ends of the carton, polygonal flaps extending from each end of two other of said panels, said polygonal flaps being adapted to be folded over into face contact with the said inner closure flaps, polygonal outer closure flaps extending from each end of another of said panels, said outer closure flaps being provided with slits for receiving locking tongues, and locking tongues extending from each end of two other of said panels adapted to be

inserted in said slits for locking the outer closure flaps.

10. An integral blank of foldable material for forming a polygonal carton, comprising a body portion having a rectangular terminal panel and five adjacent rectangular panels forming the sides of the carton, polygonal inner closure flaps extending from each end of the said terminal panel and forming inner end closures for the ends of the carton, a pasting flap hinged to the opposite terminal panel adapted to be glued to the marginal portion of said first terminal panel, polygonal flaps extending from each end of two other of said panels, said polygonal flaps being adapted to be folded over into face contact with the said inner closure flaps, polygonal outer closure flaps extending from each end of another of said panels, said outer closure flaps being provided with slits for receiving locking tongues, and locking tongues extending from each end of two other of said panels adapted to be inserted in said slits for locking the outer closure flaps.

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