May 3, 1960 G. DE MILLION-CZARNECKI 2,935,192

DISPENSING PACKAGE

Filed Jan. 15, 1958 2 Sheets-Sheet 1

Fig. 3

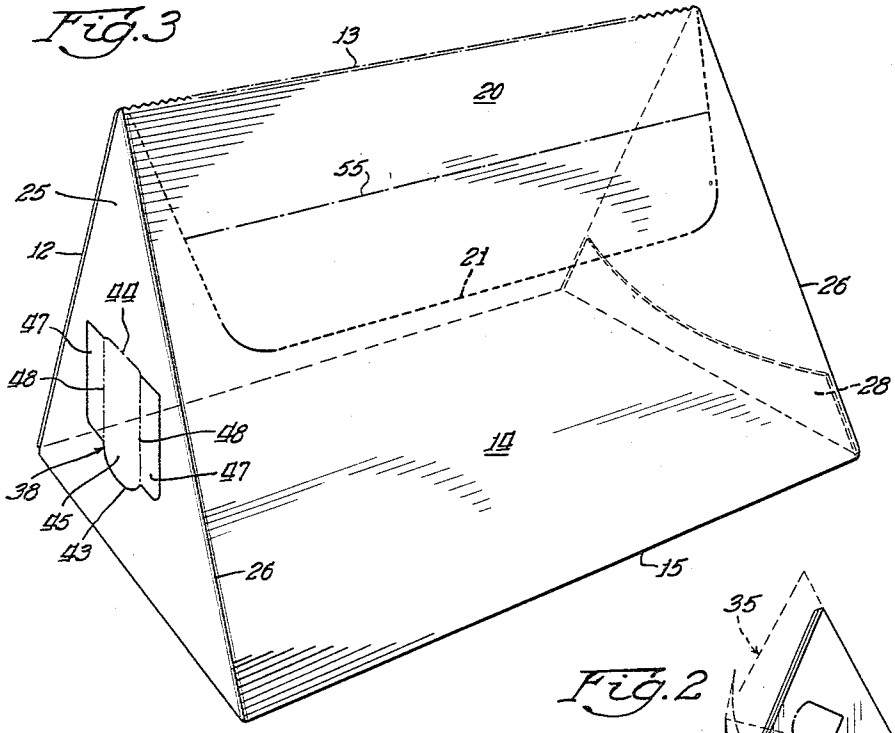


Fig. 2

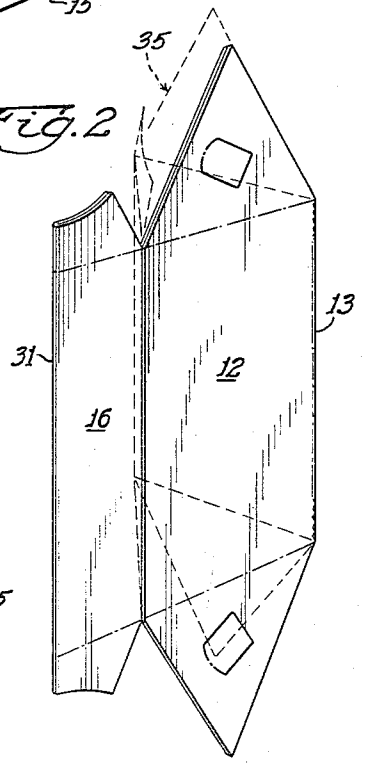
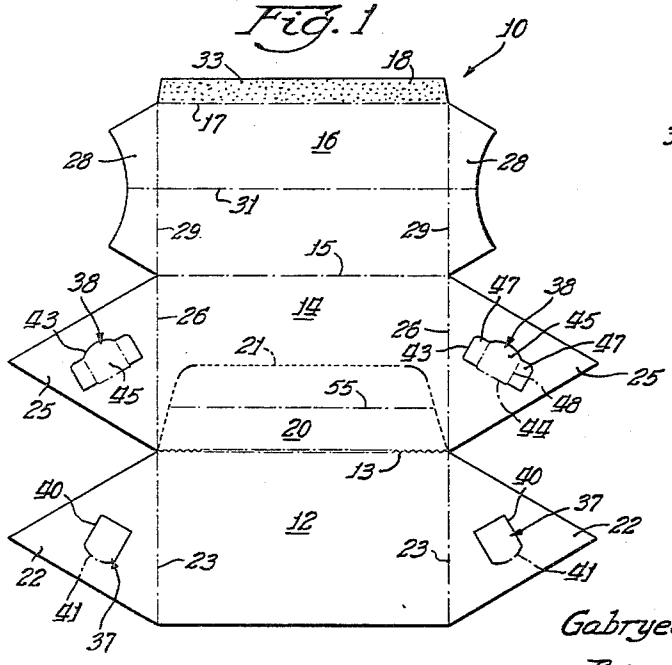


Fig. 1



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Fig. 4

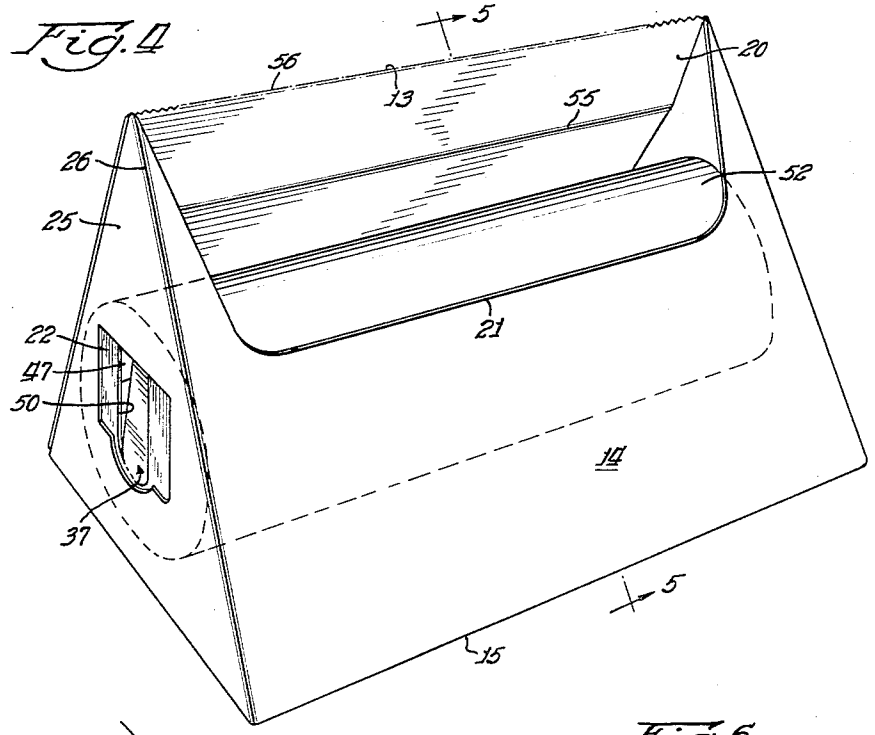


Fig. 5

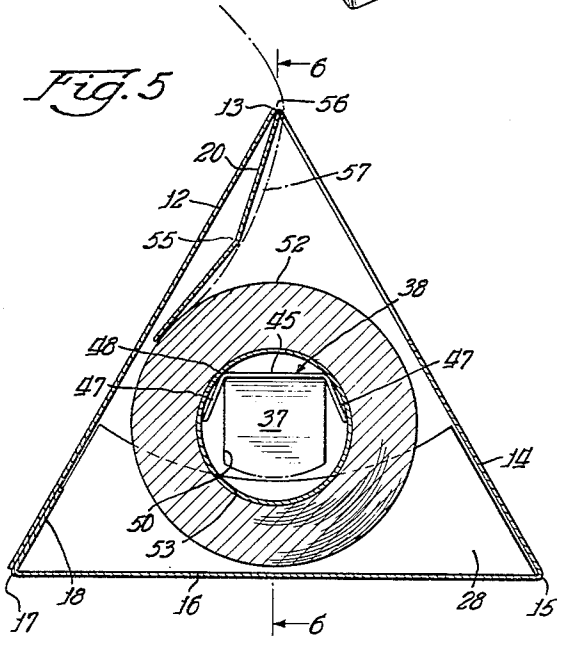
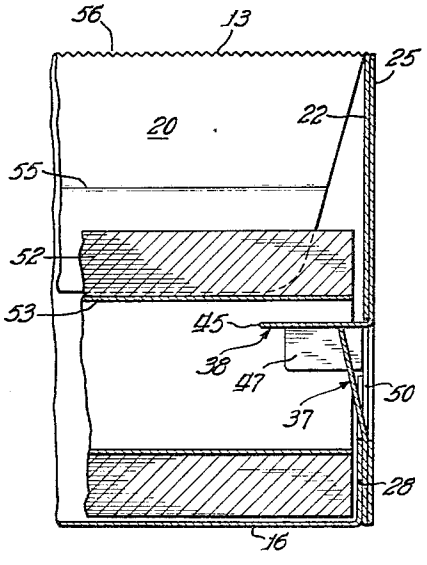


Fig. 6



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United States Patent Office 2,935,192 Patented May 3, 1960

2,935,192

DISPENSING PACKAGE

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Application January 15, 1958, Serial No. 709,095

8 Claims. (Cl. 206—58)

This invention relates generally to cartons, and more particularly to a carton of the type formed from a one-piece blank of paperboard, designed to encase a roll of sheet material and permit dispensing of said material in controlled lengths.

One object of the present invention is to provide a carton of this type which includes simple and improved roll positioning means for rotatably mounting said roll within the carton.

Another object of this invention is to provide in a carton of this type which is collapsible, roll positioning means formed from the carton walls, which roll positioning means also afford locking means for maintaining the carton in assembled condition.

A further object of this invention is to provide a carton of this type adapted to hold the roll securely for shipping, and when open to display the entire length of the roll material retained therein, affording access to the roll for dispensing of said material without removal of the roll from the carton.

Still another object of this invention is to provide a carton of this type having means for access to the roll of material and affording a double cutting edge adjacent said access means and cooperating therewith, for dispensing said material in controlled lengths.

According to the general features of this invention the improved dispensing carton comprises a one-piece blank which is foldable to provide a three-sided or triangular shaped carton having multi-ply end walls. The multi-ply end walls are formed from overlapping end flaps hingedly connected to the side wall panels, having portions thereof displaced inwardly to provide positioning members upon which a hollow roll of sheet material may be rotatably mounted. The positioning members are formed by displacing aligned central portions of the overlapping end flaps inwardly, said displaced portions cooperating to interlock the end flaps whereby to hold the set-up carton in assembly. One side wall is cut and perforated in a manner to permit a portion thereof to be displaced inwardly about the hinged connection with an adjacent side wall, thereby to provide access to the roll material and a double cutting edge at said hinged connection. Said displaceable portion of the one side wall is formed substantially coextensive with said roll whereby displacing said portion displays the entire length of the roll material and affords access thereto for dispensing said material along the double cutting edge. This particular carton construction provides packaging means suitable for receiving and retaining a roll of material compactly for shipping, and when opened displaying said roll of material and affording means for dispensing same in controlled lengths, it being intended that the roll retaining means include locking means for maintaining the carton in assembled condition.

Further objects, features, and advantages of this invention will appear, or be apparent to one skilled in the art, from the following description, reference being made to the accompanying drawings, in which:

Figure 1 is a plan view of the one-piece blank used in making a carton according to the teachings of this invention.

Figure 2 is a view in perspective of the blank of Figure 1 folded and glued to provide a carton in collapsed condition, an open condition of the carton being shown in dotted lines.

Figure 3 is a view in perspective of a set-up carton, but before displacement of the end flap portions to lock the carton in assembly.

Figure 4 is a view similar to Figure 3 but showing the end flap portions displaced inwardly locking the carton assembly and forming positioning means for a roll of sheet material disposed in said carton, and showing a portion of a carton wall displaced to afford access means and providing a double cutting edge.

Figure 5 is a transverse sectional view taken substantially on line 5—5 of Figure 4.

Figure 6 is a vertical sectional view taken substantially on line 6—6 of Figure 5.

Referring now to the drawings, and particularly to Figure 1, the reference numeral 10 indicates a sheet of suitable material, such as paperboard, cut and scored to provide a one-piece blank, bendable, in a manner to be described, to form a carton adapted for the purposes herein set forth. As shown, the blank is formed to provide serially connected main panels 12, 14, and 16, and glue flap 18, said panels 14 and 16, and panel 16 and flap 18, being hingedly connected through simple scores, indicated at 15 and 17, respectively, and panels 12 and 14 being hingedly connected through a cut-score 13, the purpose of which will be discussed later. Also to be discussed later and in conjunction with the cut-score 13, panel 14 has a portion 20 thereof defined by perforations 21 and said cut-score, said perforations permitting rupture of the panel therealong and displacement of said portion from the plane of the panel about the cut-score.

As indicated, panel 12 has end flaps 22 hingedly connected at the end edges 23 thereof, panel 14 has end flaps 25 hingedly connected at the end edges 26 thereof, and panel 16 has end flaps 28 hingedly connected at the end edges 29 thereof. The end flaps 22 and 25 are triangular in shape and constitute full end flaps, i.e. when the carton is in set-up or assembled condition each of said flaps spans an area coincidental with the carton end opening defined by the main panels or side walls 12, 14, and 16 (see Figures 3 and 5), while end flaps 28 are partial end flaps and need only extend sufficiently to function as a dust seal. It is to be noted that panel 16 and the adjoining end flaps 28 are scored centrally thereof as at 31, in a line parallel with the previously described scores 13, 15, and 17, to permit assembly of the carton to a partially set-up or collapsed condition, as will now be described.

As shown, glue flap 18 is coated with an adhesive 33 and as viewed in Figure 1 downward movement of the upper portion of panel 16 and the adjoining portions of the flaps 28 about the score 31 through 180 degrees, and downward movement of panel 12 and the adjoining flaps 22 about the cut-score 13 through 180 degrees, places flap 18 in a position lapping panel 12 and through said adhesive, secured thereto. The blank thus folded and glued provides a partially set-up or collapsed carton (Figure 2) which in such flat form is highly suitable for shipping, storing, or handling prior to complete set up and assembly. It will be appreciated that inward pressure exerted simultaneously along score 31 and cut-score 13 will cause outward movement of the panels or side walls 12, 14, and 16 to an open or tubular position, as indicated by dotted line 35. In such open position the carton interior is accessible for filling or placement of an article to be packaged.

The folding inwardly of end flaps 28, 22, and 25, in that order, to close the open ends of the carton, provides a set-up carton as shown in Figure 3. The carton in this form is triangular in cross-section, and, as shown, said carton is spatially disposed to offer the edge formed by cut-score 13 as an apex. It should be understood that although the carton embodiment illustrated is of triangular shape, such shape is not material to the invention described. It will be obvious in the description that follows that the number of main panels or side walls, and the subsequent shape of the carton, i.e., triangular, rectangular, hexagonal, etc., is a matter of choice and design which does not effect the cooperation of elements as recited herein.

Referring once again to Figure 1, the full end flaps 22 and 25 have central portions thereof, 37 and 38, respectively, cut and scored in a manner as to permit displacement of each said portion from the plane of its flap, for a purpose to be described later. The central portion or tab 37 of flap 22 is formed, as shown, in substantially rectangular shape, having three sides thereof defined by a cut 40 with the fourth side being a score, indicated at 41. The central portion or tab 38 of flap 25, defined by cut 43 and score 44, is formed to provide a main portion 45 of substantially rectangular shape having wing portions 47 hingedly connected thereto, as by scores 48. It is noted, that whereas tab 37 is hingedly connected to flap 22 at the tab side 41 remote from cut-score 13, tab 38 is hingedly connected to flap 25 at its tab side 44 nearest said cut score 13. The relation of opposite hinge connections for tabs 37 and 38 is significant in the end flap interlock for carton assembly, as will now be described.

As shown in Figure 1, it is intended that tab 37 and the main portion 45 of tab 38 be similar in shape and size, and complementary in arrangement, so that when the carton is set-up as shown in Figure 3, with flap 25 overlying flap 22, the main portion 45 of tab 38 will overlie and be aligned with the tab 37. Finger pressure applied to the portion 45 of tab 38 to displace same inwardly about score 44 will also cause displacement inwardly of tab 37 about score 41. It is noted that such displacement inwardly results in the tab portion 45 moving through flap 22 at the opening 50 therein afforded by the simultaneous displacement inwardly of tab 37, said opening being of width sufficient to accommodate only the main portion 45, whereby the wing portions 47 are wiped or folded inwardly about their scores 48 to permit such displacement, and thereby forming a U-shaped projection. Complete displacement of tab portion 45 to the horizontal position of Figure 6 disposes wing portions 47 entirely within the carton, whereupon passing free of the opening 50 said wing portions swing outwardly tending to their original planar disposition. Such outward movement of the wing portions, best shown in Figure 5, prevents withdrawal of the tab 38 through opening 50 and constitutes the previously mentioned end flap interlock. Tab 37 having been pivotally displaced by the inward movement of tab 38, tends to return to its original planar position, and does in fact move to the wedging position indicated in Figure 6, comprising not only a dust seal for the carton interior but also a support for tab portion 45, as will be explained. It is noted that the wedging disposition of tab 37 with tab portion 45 also provides an end flap interlock, and the wedging action increases as, and when, tab 37 is forced outward.

It is apparent that the end flap interlock as above described is an adequate lock to maintain carton assembly regardless of the carton contents. However, such lock construction was designed for and, because of its particular configuration extending inwardly, is ideally suited for the packaging of roll material having a hollow core. The packaging of such roll material is illustrated in Figures 4, 5, and 6, and contemplates a carton construction providing the described lock at both ends thereof.

Referring to Figure 4, a typical article to be packaged is shown as a roll of sheet material 52. As seen in Figure 6, said roll terminates adjacent the carton end wall comprising flaps 22 and 25, and has a hollow core 53 into which the tab 38, formed to present an inverted U-shaped projection, extends. As shown in Figure 5, the hollow core inner surface is contacted at several points by tab 38, but the primary support is afforded along the main portion edges coincidental with scores 48. While the tab 38 through its wing portions 47 is sufficient to position and retain the roll material, it is noted that additional support therefor is obtained through the tab 37 which underlies the main portion 45 of tab 38. Thus, the weight of the roll material being imposed on tab 38 along scores 48, is transferred through wing portions and tab 37 to the composite end wall construction. Such interlocking tab construction provides adequate support of the roll material to maintain it in a position free from contact with the carton side walls 12, 14, and 16, thereby affording roll supporting and retaining means which will permit rotation of said roll, for a purpose now to be described.

As previously mentioned, it is contemplated that the roll material will be suitable for dispensing, and in conjunction with the provision of a confined but rotatable roll of material the carton is constructed to afford access to said roll without removal of same from the carton. Said access means is provided by rupture of panel 14 along perforations 21 and displacement of panel portion 20 inwardly about cut-score 13. To facilitate complete displacement of portion 20 to a position adjacent side wall 12, as shown in Figure 5 said portion is provided with a centrally located score 55 parallel to cut-score 13, which permits sufficient distortion of said portion to manipulate same over the roll material. In this position, and because of the cut-score 13, a double edge or blade 56 is formed at the carton apex, comprising a serrated or saw-edge surface suitable for cutting through material brought smartly against it. It is noted, that panel portion 20 depends pivotally from cut-score 13 and is of a sufficient length relative to the disposition of roll material 52 as to be restricted thereby in movement from the operative position shown. In addition, the tendency of panel portion 20 to return to its original planar position results in said portion remaining in frictional contact with the roll of material 52, thereby offering resistance to inadvertent unrolling or loosening of the roll material. In this respect, it is also noted that wing portions 47 of tab 38 confined within hollow core 53 are in frictional contact therewith, affording resistance to rotation of the roll. As best seen in Figure 5, the opening afforded by displacement of panel portion 20 is substantially coextensive with the carton length thereby displaying the entire length of roll material and permitting withdrawal of the material in a flat state.

While actual disposition of roll material within the described carton can be made to provide unrolling of the material either clockwise or counter clockwise, as viewed in Figure 5, it is preferred that the roll to be rotatable clockwise in dispensing so as to permit withdrawal of the material along the panel portion 20, as indicated by dotted line 57. In this manner, the material to be removed can be brought sharply about the cutting edge assuring full contact of the material upon the cuttting edge surfaces. Also upon severance of a portion of the material the remaining unrolled material will fall free upon the roll proper, in a position easily accessible without manipulation of said roll.

From the foregoing description it is apparent that through a single gluing step the one-piece blank of Figure 1 is formed to provide the collapsed carton of Figure 2, which upon being expanded as indicated, affords an open-ended carton suitable for receiving an article to be packaged. When said article is a roll of material wound on a hollow core, as shown, closure of the end

flaps and displacement inwardly of central portions thereof provides roll positioning means disposed within the adjacent end of the hollow core. The roll positioning means while rotatably mounting the roll, also afford the means for interlocking the end flaps, thereby securing the carton in assembled condition. A portion of a carton wall is displaceable to provide access to the roll material, and adjacent said access is formed a cutting edge for severing the material from the roll in desired lengths.

While the foregoing description sets forth the invention in specific terms and in conjunction with a preferred embodiment, it is to be understood that many variations and modifications may be resorted to without departing from the broad aspects of the invention as defined in the appended claims.

Having described the invention, what is claimed is:

1. A carton for containing and rotatably supporting a roll of sheet material wound on a hollow core, said carton being formed from a single blank of paperboard material suitably cut and scored to provide a plurality of side walls and multi-ply end walls, each of said multi-ply end walls being formed by overlapping end wall forming flaps extending from adjacent ends of said side walls whereby said overlapped flaps provide an inner flap and an outer flap, said outer flap having means formed centrally thereof comprising a main tab portion hingedly connected thereto and wing portions hingedly connected to said main tab portion, said inner flap formed to provide an opening centrally thereof, aligned with said main tab portion and substantially equal in configuration thereto, said outer flap tab portion extending inwardly through the inner flap opening for rotatably supporting the adjacent end of the hollow core, and said wing portions extending angularly outwardly from said tab portion to engagement with the inner surface of the inner flap whereby to interlock the outer and inner flaps.

2. A carton for containing and rotatably supporting a roll of sheet material wound on a hollow core, said carton being formed from a single blank of paperboard material suitably cut and scored to provide a plurality of side walls and multi-ply end walls, each of said multi-ply end walls being formed by overlapping end wall forming flaps extending from adjacent ends of said side walls whereby said overlapped flaps provide an inner flap and an outer flap, said outer flap having means formed centrally thereof comprising a main tab portion hingedly connected thereto and wing portions hingedly connected to said main tab portion, said inner flap formed to provide an opening centrally thereof, aligned with said main tab portion and substantially equal in configuration thereto, having a tab hingedly connected to one edge of said opening, said outer flap tab portion extending inwardly through the inner flap opening for rotatably supporting the adjacent end of the hollow core, said wing portions extending angularly outwardly from said tab portion to engagement with the inner surface of the inner flap whereby to interlock the outer and inner flaps, and the inner flap tab disposed in frictional engagement with the outer flap tab portion at a point intermediate the wing portions to maintain said tab portion in said extended position.

3. A carton for containing and rotatably supporting a roll of sheet material wound on a hollow core, said carton being formed from a single blank of paperboard material suitably cut and scored to provide a plurality of side walls and multi-ply end walls, each of said multi-ply end walls being formed by overlapping end wall forming flaps extending from adjacent ends of said side walls, one of said end wall forming flaps having means formable into an inwardly extending inverted U-shaped projection disposed within the adjacent end of the hollow roll and in supporting engagement therewith, and an adjacent end wall forming flap having a tab hingedly connected thereto extending angularly inwardly to frictional engagement with the under surface of the U-shaped projection.

4. A carton for containing and rotatably supporting a roll of sheet material wound on a hollow core, said carton being formed from a single blank of paperboard material suitably cut and scored to provide a plurality of side walls and multi-ply end walls, each of said multi-ply end walls being formed by overlapping end wall forming flaps extending from adjacent ends of said side walls, one of said end wall forming flaps having means formed centrally thereof comprising a main tab portion hingedly connected thereto and a pair of wing portions hingedly connected to said main tab portion, said main tab portion and connected wing portions being formable into an inwardly extending inverted U-shaped projection disposed within the adjacent end of the hollow roll and in supporting engagement therewith, and an adjacent end wall forming flap having means operatively disposed to engage and interlock with the main tab portion and connected wing portions, said means including a tab hingedly connected to said adjacent end wall forming flap extending angularly inwardly to frictional engagement with the main tab portion and connected wing portions.

5. A one piece carton forming blank having means associated therewith for suspending an article in the carton as assembled, said blank comprising rear, front, and bottom panels connected in side by side relationship along substantially parallel longitudinally extending scores, an end wall forming flap of triangular shape extending from each end of said rear and front panels and designed to be arranged in overlapping relationship, one of said end wall forming flaps at each end of the blank incorporating means for suspending one end of the article, said article suspending flaps presenting a tab portion hingedly connected to said flap and presenting a pair of wing portions hingedly connected to opposite edges of said tab portion, and the other of said end wall forming flaps at each end of the blank incorporating means for interlocking with the adjacent said one flap when the carton is assembled, said interlocking flap presenting a tab hingedly connected thereto, said tab portion and connected wing portions being formable into an inwardly extending inverted U-shaped projection upon displacement of the tab from the interlocking flap and insertion of said tab portion and connected wing portions therethrough.

6. A carton for containing and rotatably supporting a roll of sheet material wound on a hollow core, said carton being formed from a single blank of paperboard material suitably cut and scored to provide a plurality of side walls and multi-ply end walls, each of said multi-ply end walls being formed by overlapping end wall forming flaps extending from adjacent ends of said side walls, one of said end wall forming flaps having means formed centrally thereof extending inwardly to disposition within the adjacent end of the hollow core, said means comprising a main tab portion hingedly connected at one edge to said one end wall flap and a pair of wing portions hingedly connected to said main tab portion, said wing portions being connected to said main tab portion at opposite edges thereof and extending downwardly therefrom, and an adjacent end wall forming flap having a tab hingedly connected thereto extending inwardly therefrom, said tab being disposed between the wing portions and having the edge opposite the hinged connection in frictional engagement with the main tab portion.

7. A carton as defined in claim 6 further characterized by the main tab portion being disposed in a plane substantially normal to the end wall forming flaps.

8. A carton for containing and rotatably supporting a roll of sheet material wound on a hollow core, said carton being formed from a single blank of paperboard material suitably cut and scored to provide a plurality of side walls and multi-ply end walls, each of said multi-ply end walls being formed by overlapping end wall forming

flaps extending from adjacent ends of said side walls, one of said wall forming flaps having a centrally formed tab portion hingedly connected thereto, an adjacent end wall forming flap formed to provide an opening centrally thereof, having a tab hingedly connected to one edge of the opening, said tab portion extending through said opening and disposed in supporting engagement within the adjacent end of the hollow core, and said tab disposed in frictional engagement with said tab portion to maintain the tab portion in said extended position, said tab being disposed intermediate the tab portion and the adjacent multi-ply end wall.

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