Oct. 25, 1966 G. V. WOODLING 3,281,035

HAND-HELD CARTON DISPENSER

Filed Sept. 20, 1965 3 Sheets-Sheet 1

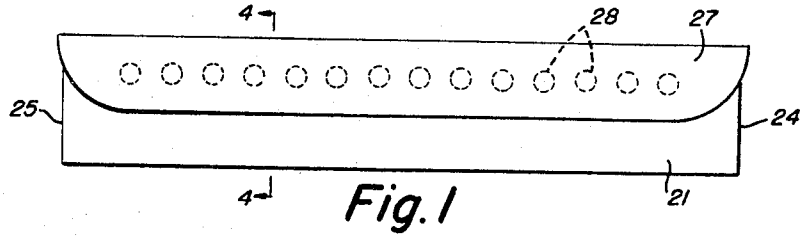


Fig. 1

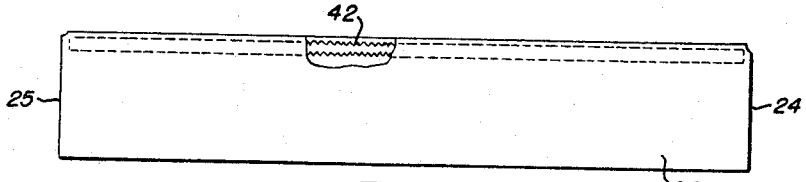


Fig. 2

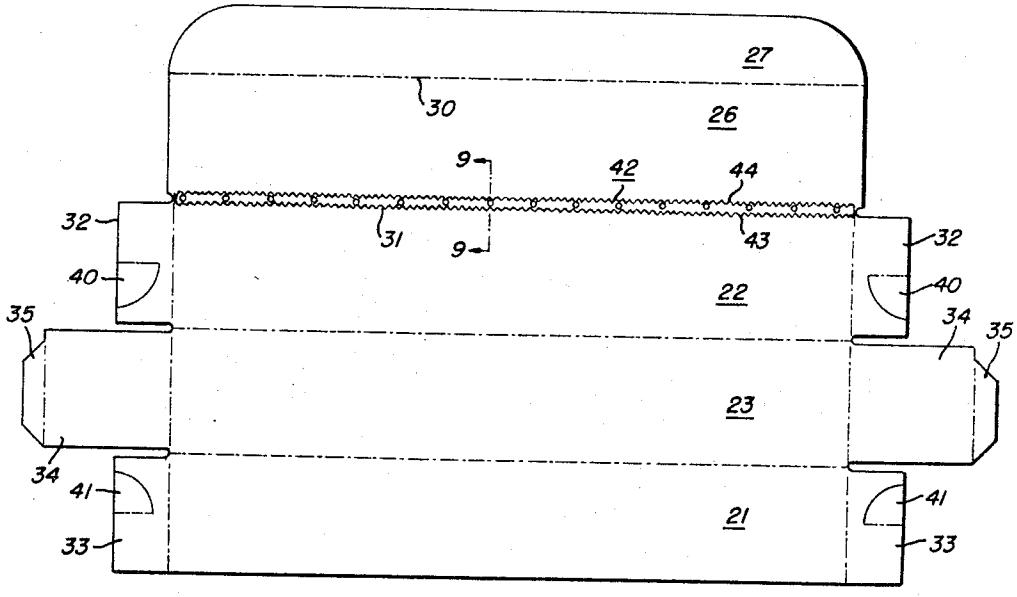


Fig. 3

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HAND-HELD CARTON DISPENSER

Filed Sept. 20, 1965 3 Sheets-Sheet 2

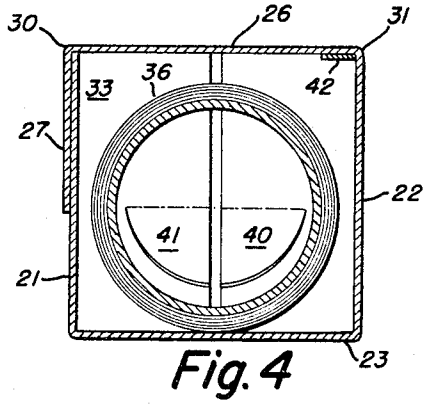


Fig. 4

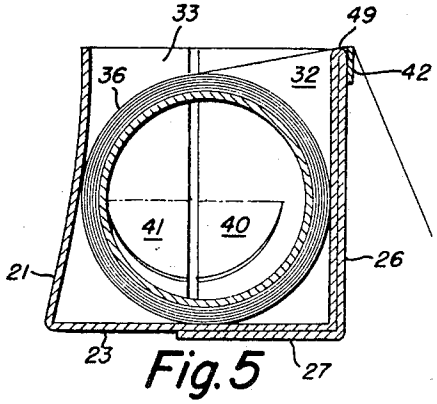


Fig. 5

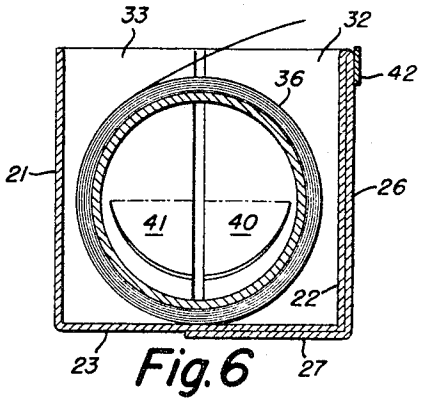


Fig. 6

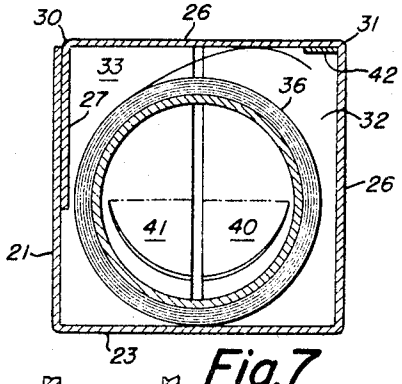


Fig. 7

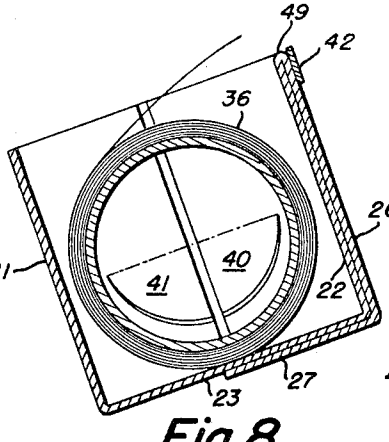


Fig. 8

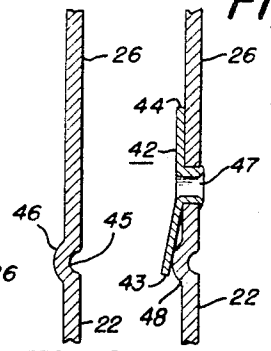


Fig. 9 Fig. 10

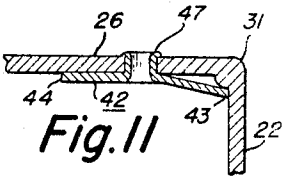


Fig. 11

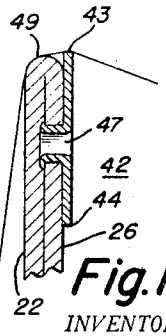


Fig. 12

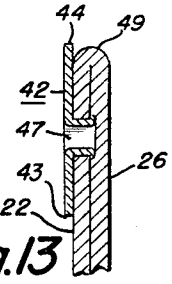


Fig. 13

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HAND-HELD CARTON DISPENSER

Filed Sept. 20, 1965 3 Sheets-Sheet 3

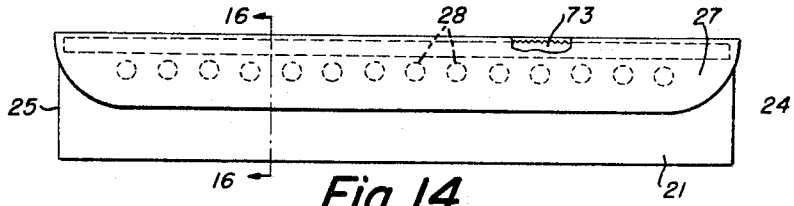


Fig. 14

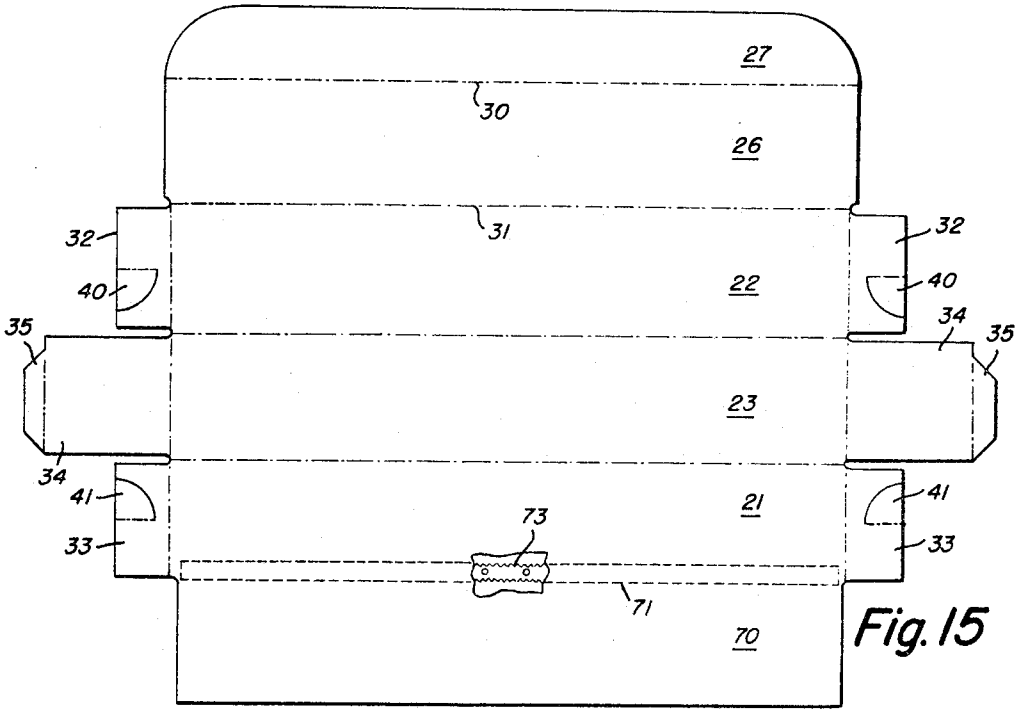


Fig. 15

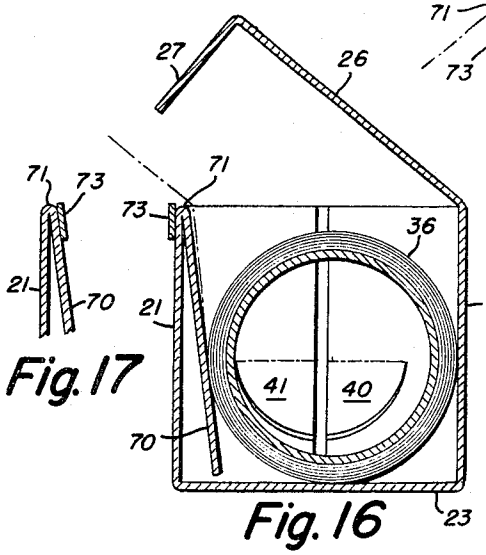


Fig. 16

Fig. 17

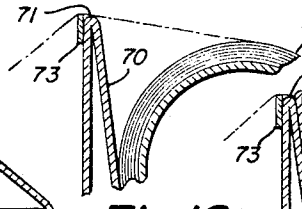


Fig. 19

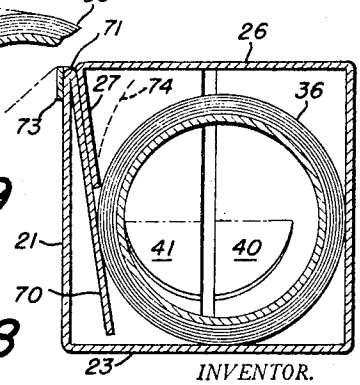


Fig. 18

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United States Patent Office

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Patented Oct. 25, 1966

3,281,035
HAND-HELD CARTON DISPENSER

George V. Woodling, 22077 W. Lake Road, Rocky River, Ohio

Filed Sept. 20, 1965, Ser. No. 488,328
6 Claims. (Cl. 225—48)

My invention relates to a hand-held carton dispenser having an elongated tear-edge means to facilitate an operation of tearing a sheet of material from the free end portion of a strip of material wound on a supply roll mounted within the carton dispenser.

When a sheet of material is torn from the free end portion of a strip of material wound on the supply roll, the tearing operation leaves a torn edge which constitutes the beginning of a next advanced free end portion. My invention particularly is useful in dispensing aluminum foil and other thin sheets of wrapping material, such as waxed paper and polymeric film sheets, or a combination of these with aluminum foil. Preferably, my invention may be embodied in a hand-held carton dispenser made of paper-board. In this application, the new free end portion of the strip which presents itself after each sheet has been torn from the strip will be referred to as the "next advanced free end portion."

There are many different types of hand-held carton dispensers on the market, but all of them have their shortcomings. In these hand-held dispensers, most attention has been directed to the ease with which the carton may be initially opened. On the other hand, very little attention has been given to the ease with which the strip of material may be dispensed into sheets after the carton is once opened. Each time a new sheet is dispensed, the housewife usually has to "pick around" in order to get hold of the next advanced free end portion of the strip for the next dispensing operation.

An object of my invention is the provision of a dispenser whereby the next advanced free end portion of the strip readily and automatically presents itself for easy grasping in starting the next dispensing operation.

Another object is to take advantage of the resilient tendencies and behavior of the strip of material being dispensed, as well as that of the paperboard from which the hand-held dispensers are made.

Another object is the provision of a dispenser by which nature aids in the dispensing operation rather than working against the operation.

Another object is to provide for stiffening or reinforcing the elongated dispensing edge of the carton dispenser to keep the elongated tear-edge means which is mounted therealong from bowing or flexing outwardly as a sheet of material is being torn off.

Another object is to provide for mounting the elongated tear-edge means along an elongated foldable dispensing edge of double thickness formed by folding two adjacent carton panels in face-to-face relationship about an elongated common hinge-joint, hingedly connecting said panels together.

Another object is to provide for mounting the elongated tear-edge means on an inside panel surface of the carton dispenser along an elongated foldable dispensing edge of double thickness formed by folding two adjacent carton panels in face-to-face relationship about an elongated common hinge-corner hingedly connecting said panels together.

Another object is to provide for mounting the elongated tear-edge means on an outside panel surface of the carton dispenser along an elongated foldable dispensing edge of double thickness formed by folding two adjacent carton panels in face-to-face relationship about an elongated common hinge-joint, hingedly connecting said panels together.

Another object is to provide for mounting the elongated tear-edge means along an elongated foldable dispensing edge of double thickness formed by reversibly folding the lid panel of the carton dispenser in face-to-face relationship to the rear panel about an elongated common hinge-corner, hingedly connecting said lid panel and said rear panel together.

Another object is to provide for mounting the elongated tear-edge means along an elongated common hinge-joint, hingedly connecting two adjacent carton panels together, the elongated tear-edge means being mounted on either one of the two adjacent carton panels and on either the inside or outside of the carton.

Another object is to provide for mounting the elongated tear-edge means along an elongated common hinge-corner, hingedly connecting two adjacent carton panels together, the elongated tear-edge means being mounted on either one of the two adjacent carton panels and on either the inside or the outside of the carton.

Other objects and a fuller understanding of the invention may be had by referring to the following description and claims, taken in conjunction with the accompanying drawings in which:

FIGURE 1 is a front view of my hand-held carton dispenser showing the flange panel which is hingedly connected to the lid panel, the dotted circles representing glue spots which are provided on the underneath side of the flange panel and which are disposed to be easily separated upon initially opening the carton, the view being substantially one-half the size of a carton dispenser;

FIGURE 2 is a top view of my hand-held carton dispenser with the elongated tear-edge means, which is mounted on the underneath side of the lid panel, being shown in dotted lines, a portion of said lid panel being also removed to show a portion of the tear-edge means in full;

FIGURE 3 is a plan view of a paperboard blank from which my hand-held carton dispenser may be constructed, the top or upper wall surface of the blank, which when folded, becomes the inside of the carton dispenser;

FIGURE 4 is a cross-sectional view taken along the line 4—4 of FIGURE 1 showing the lid panel in its closed position with the flange panel disposed (spot-glued) against the outer surface of the front panel (being the condition in which the supply roll is shipped), the view being substantially full-scale or twice the scale of FIGURE 1;

FIGURE 5 is a cross-sectional view with the lid panel and the flange panel both being reversibly folded respectively against the outer surface of the rear panel and of the bottom panel and with the free end portion of the strip of material riding upon the elongated tear-edge means preparatory to its being torn off;

FIGURE 6 is a cross-sectional view showing the next advanced free end portion of the strip of material in a raised position above the supply roll, being the position which it will automatically assume after a sheet of material has been torn off;

FIGURE 7 is a cross-sectional view with the lid panel closed and with the flange panel disposed against the inner surface of the front panel, being the condition of the carton dispenser when it is being stored in a cupboard or on a shelf after the sheet has once been torn off;

FIGURE 8 is a cross-sectional view with the lid panel and the flange panel both being reversibly folded respectively against the outer surface of the rear panel and of the bottom panel, the carton dispenser being rotated to a counter-clockwise position about fifteen degrees from the horizontal, being the position that a person would normally want to hold the carton dispenser when grasping the free end portion of the strip of material in starting the next dispensing operation;

FIGURE 9 is a fragementary enlarged view of a cross-section of the lid panel and the rear panel in the flat, taken along the line **9—9** of FIGURE 3 and showing the formation of an elongated depressed groove and a complementary out-pressed ridge on opposite sides of the paperboard blank, the groove and ridge comprising the conventional score or crease line conditioning the paperboard whereby the lid panel and the rear panel may be folded relative to each other to form an elongated hinge-corner which hingedly connects the lid panel and the rear panel together;

FIGURE 10 is a view similar to FIGURE 9 but showing in addition thereto the mounting of the elongated tear-edge means on the ridge side of the paperboard blank which, when the blank is folded, becomes the underneath or inner wall surface of the lid panel;

FIGURE 11 is a view similar to FIGURE 10 but showing the lid panel positioned substantially perpendicular to the rear panel, representing the closed position of the lid panel on the box and showing the relationship of the tear-edge means with respect to the inside of the hinge-corner which hingedly connects the lid panel and the rear panel together, with the out-pressed ridge forming the inside surface of the hinge-corner and with the depressed groove forming the outside surface of the hinge-corner.

FIGURE 12 is a fragmentary cross-sectional enlarged view of the hinge-corner in FIGURE 11 with the lid panel reversibly folded against the outside surface of the rear panel and showing the relationship of the tear-edge means to the dispensing edge formed by such reversed folding of the hingedly connected panels, being the same relationship as shown in FIGURE 8;

FIGURE 13 is a fragementary view similar to FIGURE 12 but showing the tear-edge means mounted on the inner wall surface of the rear panel instead of on the underneath wall surface of the lid panel;

FIGURE 14 is a modified carton dispenser having a truss panel hingedly connected along a common hinge-joint to the top edge of the front panel;

FIGURE 15 is a plan view of a paperboard blank from which my hand-held carton dispenser of FIGURE 14 may be constructed, the top or upper wall surface of the blank, which when folded, becomes the inside of the carton dispenser;

FIGURE 16 is a cross-sectional view taken along the line **16—16** of FIGURE 14 showing the truss panel with the tear-edge means mounted on the outside surface of the front panel, the lid panel being open;

FIGURE 17 is a fragmentary view of FIGURE 16 with the tear-edge means mounted on the inside surface of the truss panel;

FIGURE 18 is a cross-sectional view similar to FIGURE 16 with the lid panel closed preparatory to tearing the withdrawn strip of material off; and

FIGURE 19 is a fragmentary view of FIGURE 16 with the withdrawn strip of material leaving the supply roll at the top thereof.

With reference to the drawings, my hand-held carton dispenser comprises substantially an elongated square box having an elongated front panel **21**, a rear panel **22**, and a bottom panel **23**. The end panels of the box are identified by the reference characters **24** and **25**, respectively. The top peripheral edge of the elongated box defines an elongated opening through which the supply roll is mounted in the box and from which the free end portion of the supply roll is withdrawn. The opening is adapted to be closed by a lid panel **26** having a flange panel **27** disposed (spot-glued) against the outer surface of the front panel **21** to facilitate easy opening of the box. The glue spots are identified by the reference character **28**.

The lid panel **26** and the flange panel **27** are hingedly connected together along a score or crease line **30** which when folded becomes an elongated common hinge-corner **30**. Also, the lid panel **26** and the rear panel **22** are hingedly connected together along a score or crease line **31** which when folded becomes an elongated common hinge-corner **31**. In FIGURE 3, the score or crease lines which form the corners of the box are shown by dot-dash lines, except **31** which is covered by a tear-strip **42**.

The end panels **24** and **25** of the box are identically constructed and each comprises two inside end flaps **32** and **33** and an outside end flap **34**, all being folded and glued together. The outside end flap **34** is provided with a top marginal edge portion **35** which is folded over the top of the inside flaps **32** and **33** where it then may extend as a short flange flap into the box above the supply roll. As an alternative, the top marginal edge portion **35** may be glued to the top marginal edges of the inside flaps to form sturdy top foldable edges for supporting the end portions of the lid panel when closed. The construction of the box thus far described is rather common.

The foil or other sheet material which is to be dispensed is wound on a hollow supply roll **36**. As the free end portion of the strip of material is withdrawn from the box, the supply roll **36** is caused to unwind by rotating within the box. It is preferably to stabilize the supply roll within the box as it is being unwound. For this purpose, the inside flaps **32** and **33** are respectively provided with hinged tabs **40** and **41** which are disposed to extend into the open ends of the hollow supply roll, see FIGURES **4–8**. The hinged tabs **40** and **41** stabilize the supply roll within the box by keeping the supply roll from elevating itself within the box when the free end portion of the strip of material is being withdrawn from the roll.

The elongated tear-edge means is identified by the reference character **42** and preferably comprises an elongated thin metal strip having first and second opposite elongated marginal edge tear-teeth **43** and **44** defining the width thereof, see FIGURES 3 and 10. For economical manufacture, both edges of the metal strip are provided with tear-teeth, although only one edge is used in the tearing operation. The elongated tear-edge means **42** is preferably mounted upon the underneath side of the lid panel next adjacent the inside hinge-corner **31**, see FIGURES 2, 3, 4 and 7. The score or crease line **31** which forms the hinge-corner **31**, as well as the score or crease lines for all other hinge-corners or joints, is made during the manufacture of the box. In the manufacture, the score or crease lines on one side of the paperboard comprise elongated depressed grooves **45** and the score or crease lines on the other side comprise elongated complementary out-pressed ridges **46**, see FIGURES 9 and 10. In FIGURE 11, the score or crease lines **31** is folded into the hinge-corner **31** with the out-pressed ridge forming the inside of the corner and the depressed groove forming the outside of the corner. In all instances where the cross-section of the paperboard blank is too small to show the depressed grooves and the complementary out-pressed ridges, it is to be understood that they nevertheless are present the same as shown in FIGURES 9 and 10. The elongated out-pressed ridge **46** constitutes an automatic marker for locating the elongated tear-edge means **42**. As shown in FIGURES 10 and 11, the elongated tear-edge means **42** is secured to the underneath side of the lid panel **26** by means of integrally formed staples **47** and is so aligned with respect to the out-pressed ridge **46** that the tear-teeth **43** extend beyond the top of the ridge to a place substantially above the juncture **48** where the ridge meets with the plane of the lid panel. By so locating the tear-teeth **43**, they are caused to abut against the inside wall surface of the rear panel **22** when the lid panel **26** is actuated to its closed position, see FIGURE 11. Now, when the lid panel **26** is reversibly folded to a reverse dispensing position, as shown in FIGURES 5 and 12, with its outer surface folded face-to-face against the outer surface of the rear panel **22**, the tear-teeth **43** are caused to project slightly above the elongated foldable dispensing edge **49** so formed by such reverse folding, see FIGURE 12. When the elongated tear-edge means **42** is so located with reference to the out-pressed ridge **45**, the tear-teeth

43 are ideally situated for the operation of tearing a sheet of material thereacross. In addition, the double-panel thickness, provided by the lid panel **26** being folded against the rear panel **22**, reinforces or stiffens the foldable dispensing edge **49** and keeps it from bowing or flexing outwardly as a sheet of material is torn across the tear-edge means. This reinforcement greatly improves the tearing operation.

FIGURE 13 is similar to FIGURE 12 except that the tear-edge means is mounted on the inner surface of the rear panel **22** instead of on the underneath surface of the lid panel as shown in FIGURE 4. Thus, in FIGURE 13, the tear-edge means **42** is on the inside of the box whereas in FIGURE 12, the tear-edge means is on the outside of the box. Both mountings work equally well.

The dispensing operation may be explained with reference to FIGURES 4 to 8, inclusive. The FIGURE 4 shows the condition of the carton dispenser as it is shipped before it is used. In opening the carton dispenser, the flange panel **27** is first separated from the front panel **21** by pulling outwardly on same until all the glue spots **28** are broken, after which the lid panel **26** and the flange panel **27** are reversibly folded respectively against the outer surface of the rear panel **22** and of the bottom panel **23**, see FIGURE 5. The free end portion of the strip of material is next withdrawn from the supply roll with the withdrawn strip preferably leaving the supply roll from the top thereof. When a sufficient amount has been withdrawn, it may then be severed by tearing same across the elongated tear-edge means **42**. The tearing operation is clean-cut because the foldable dispensing edge **49** is reinforced by the double thickness of the lid panel and the rear panel being folded against each other. During the tearing operation, the housewife (assuming that she is right-handed) will naturally want to hold the carton dispenser with her left-hand while she tears the strip of material with her right hand. When holding the carton dispenser with her left hand, she will naturally apply pressure against the front panel **21**, causing it to flex or bend inwardly against the supply roll. This squeezing action tends to arrest the rotation of the supply roll when the tearing operation is being performed, see FIGURE 5. When a sheet has been torn from the free end portion of the supply roll, the next advanced free end portion will automatically swing upwardly due to the resiliency of the material and assume a position above the supply roll as shown in FIGURE 6.

After the tearing operation is finished, the housewife then simply closes the lid panel **26** by inserting the flange panel **27** inside the box next adjacent the inner surface of the front panel **21**, see FIGURE 7. The closed box may now be stored in a cupboard or on a shelf until the housewife is ready to use the carton dispenser again, whereupon she reversibly folds the lid panel **26** and the flange panel **27** respectively against the rear panel **22** and the bottom panel **23**, see FIGURE 8. When the lid panel is lifted, the next advanced free end portion of the strip of material will automatically swing upwardly as shown in FIGURE 8, where it may be easily grasped for starting the next dispensing operation. The housewife in grasping the next advanced free end portion of the strip of material will normally want to hold the carton dispenser in a tilted position, as shown in FIGURE 8, where it is rotated to a counter-clockwise position about fifteen degrees from the horizontal. This tilted position will tend to make the next advanced free end portion of the strip of material swing upwardly where it may be easily grasped for starting the next dispensing operation. For a left-handed person, the operation is the same except that the carton dispenser is held in the right hand while the left hand grasps the next advanced free end portion of the strip of material for completing the tearing operation.

In the above description of the dispensing operation, the free end portion of the strip of material was preferably withdrawn from the top of the supply roll. As an alternative, the free end portion of the strip of material may be withdrawn from that side of the supply roll which is next adjacent to the dispensing edge as shown in FIGURE 12.

A modification of the invention is shown in FIGURES 14–19. In these figures, a truss panel **70** has been added. As illustrated, the truss panel is folded inside the box next adjacent the supply roll and is hingedly connected along a common hinge-joint **71** to the top edge of the front panel **21**, see FIGURE 15. In this view, the tear-edge for a tear-strip **73** is identified by the reference character **71**. This same reference character is used to identify the common hinge-joint since the two coincide with each other. The construction of the modified box is the same as that shown in FIGURES 1–8 and corresponding parts are designated by the same reference characters. FIGURE 16 shows the free end portion of the strip of material leaving the supply roll on that side of the supply roll next adjacent the truss panel **70**. The truss panel **70**, when folded inside the box as shown, provides a double thickness to the dispensing edge. The tear-edge means, now identified by the reference character **73** is mounted on the outside surface of the front panel **21**. The resiliency of the reverse fold at the dispensing edge causes the truss panel **70** to swing against the side of the supply roll. The truss panel **70** stabilizes the dispensing edge and keeps the tear-edge means from bowing or flexing outwardly during the tearing operation. For easy dispensing in FIGURE 16, the strip of material is pulled out a couple of inches after which the flange panel **27** is tucked in against the backside of the withdrawn strip, as shown in FIGURE 18. The free end of the withdrawn strip of material is now drawn out to the desired length with the lid panel closed. The withdrawn strip may now be torn off, after which the box with the lid panel **26** still closed may be stored on a shelf or in a cupboard until ready for reuse. In the next dispensing operation, when the operator lifts the lid panel **26** and thereby withdraws the flange panel **27**, the free end portion of the strip of material will ordinarily swing away from the truss panel **70**, as shown by the dotted line **74** in FIGURE 18. The strip, in the position of the dotted line **74**, may be easily grasped for starting the next dispensing operation. The applicant has discovered that the free end portion of the strip of material will ordinarily swing away from the tear-edge means, as shown by the dotted line **74** when a truss panel is used. In FIGURE 19, the free end portion of the strip of material is withdrawn from the top of the roll as shown in FIGURE 5.

In the present invention, the dispensing edge is partly rendered stiff and sturdy by reason of the double thickness resulting from the folding of two adjacent panels with respect to each other. In the case of the dispensing edge in FIGURES 5, 6 and 8, this stiffness is further augmented by reason of the fact that the flange panel **27** is hooked or folded under the bottom panel **23**. The juxtaposition of the panels causes the lid panel **26** to function as a truss panel for reinforcing the elongated dispensing edge.

The hooking of the folded flange panel **27** under the bottom panel **23** makes the truss effect of the lid panel **26** all the more pronounced, to the end that the elongated dispensing edge is rendered extra stiff. A truss is usually in the form of a triangle, such as the truss panel **70** in FIGURES 16–19. However, the hooked flange panel **27** under the bottom panel appears to give a corresponding triangular effect and thus in this application the lid panel **26** in its reversibly folded position may properly be characterized as a truss panel.

In the case of the dispensing edge in FIGURES 16–19, this stiffness is further augmented by reason of the fact that the truss panel **70** is disposed at an angle to the front panel **21** and functions as a brace to reinforce the dispensing edge. In both embodiments, the dispensing edge, due to the truss panels, is rendered rather stiff as compared to

that afforded by a panel of single thickness. The added stiffness plays a part in producing an easier tearing operation.

The present disclosure includes that contained in appended claims as well as that of the foregoing description.

Although this invention has been described in its preferred form with a certain degree of particularity, it is understood that the present disclosure of the preferred form has been made only by way of example and that numerous changes in the details of construction and the combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as hereinafter claimed.

What is claimed is:

1. A carton dispenser constructed of paperboard and having elongated tear-edge means to facilitate an operation of tearing a sheet of material from a free end portion of a strip material wound on a supply roll mounted within the carton dispenser, said tearing operation leaving said strip of material with a torn edge constituting the beginning of a next advanced free end portion, said carton dispenser comprising an elongated hollow box into which said supply roll may be mounted and from which the free end portion of said strip of material may be withdrawn, said box including at least a rear side panel and a lid panel joined together along a common score line, said lid panel comprising a truss panel folded along said common score line in a juxtaposed relationship with said rear side panel and effecting with said rear side panel an elongated blank paperboard dispensing edge of double thickness, said truss panel reinforcing said elongated blank paperboard dispensing edge to render it stiff, means securing said elongated tear-edge means to one of said panels with a tear-edge thereof in substantial alignment with said elongated blank paperboard dispensing edge to facilitate the operation of tearing a sheet of material from the free end portion of said strip of material.

2. The structure of claim **1**, wherein the supply roll is mounted in said box with said free end portion of said strip of material leaving said supply roll from the top thereof.

3. The structure of claim **1**, wherein the supply roll is mounted in said box with said free end portion of said strip of material leaving said supply roll from a side thereof which is closest to said rear side panel.

4. The structure of claim **1**, wherein said elongated tear-edge means is secured to said lid panel.

5. The structure of claim **1**, wherein said elongated tear-edge means is secured to said rear side panel.

6. The structure of claim **1**, wherein said lid panel has a flange panel hingedly connected thereto along a common crease line, said box also including a bottom side panel connected to said rear side panel along a common score line comprising an elongated corner of said box, said lid panel having a width substantially the same as that for said rear side panel, whereby when said lid panel and said rear side panel are folded relative to each other to effect said elongated blank paperboard dispensing edge, said flange panel may be folded against said bottom side panel.

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