

Oct. 25, 1966

G. V. WOODLING

3,281,034

SHEET MATERIAL DISPENSER

Filed March 29, 1965

3 Sheets-Sheet 2

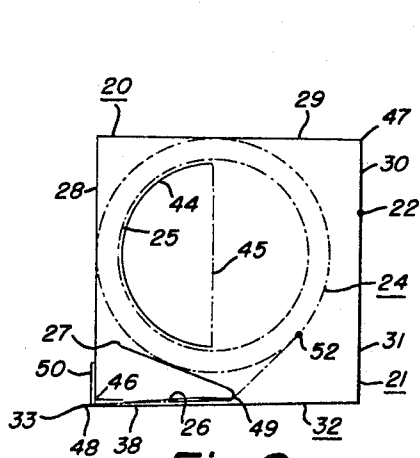


Fig. 8

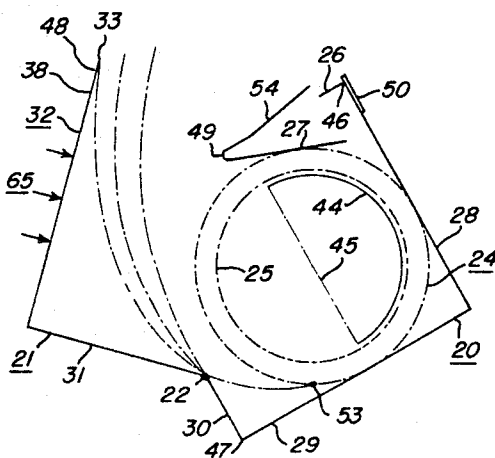


Fig. 9

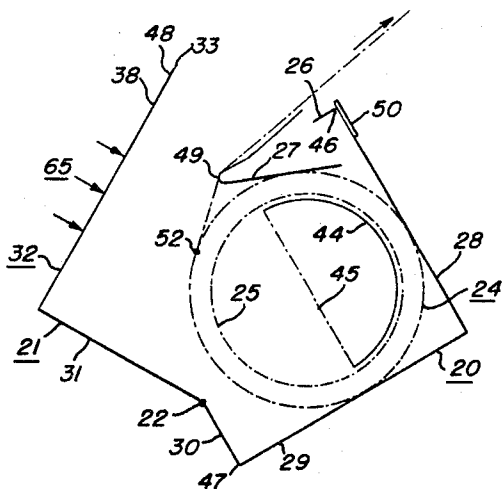


Fig. 10

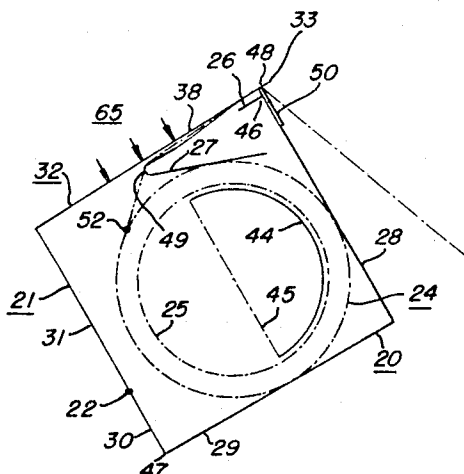


Fig. 11

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3 Sheets-Sheet 3

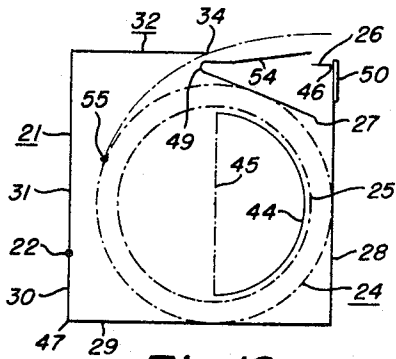


Fig. 12

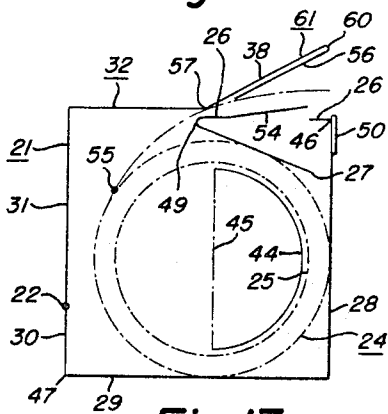


Fig. 13

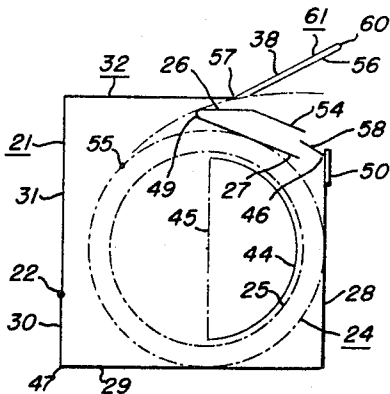


Fig. 14

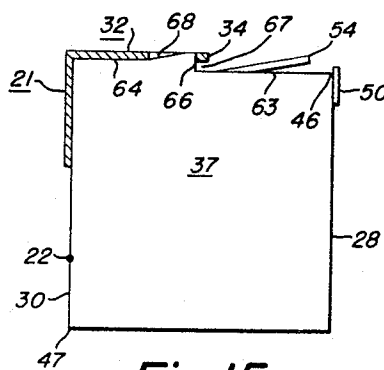


Fig. 15

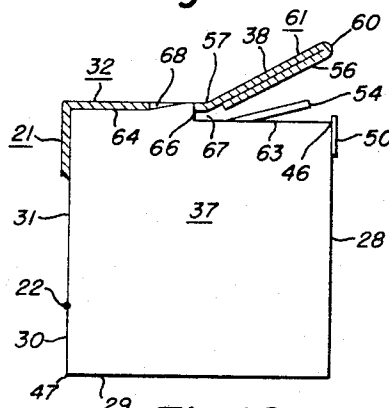


Fig. 16

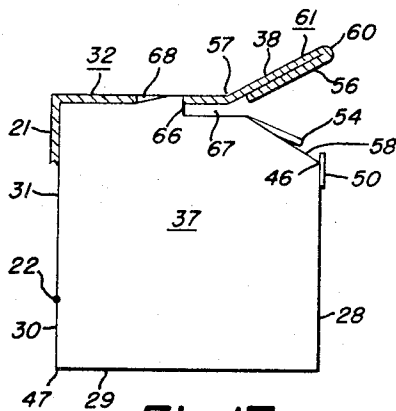


Fig. 17

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SHEET MATERIAL DISPENSER
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7 Claims. (Cl. 225-48)

My invention relates to a dispenser and method for dispensing sheets of material which may be torn from a strip wound on a supply roll by tearing the strip along a transversely disposed tear-edge means. The invention more particularly relates to a dispenser and method for dispensing such materials which possess in their wound state on the supply roll a resiliency tending to urge the free end portion thereof to unwind itself in a reverse direction from the supply roll and further tending to overbalance gravity whereby, when a sheet has been torn from the strip, the next advanced free end portion will swing upwardly and away from the tear-edge means and present itself for easy grasping for starting the next dispensing operation. My invention particularly is useful in dispensing aluminum foil and high grade resilient waxed paper or the combination of the foil and paper. Preferably, my invention may be embodied in a hand-held carton dispenser made of paperboard. 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 advance 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 on 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 and method 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 and method by which nature aids in the dispensing operation rather than working against the operation.

Another object is to control the dispensing operation so that there is no tendency for the torn edge of the next advanced free end portion of the strip to stick to the tear-edge means.

Another object is to utilize resiliency to overcome gravity in the dispensing operation.

Another object is to locate the hinge for the lid on the hand-held dispenser at a place other than along a corner edge of the carton.

Another object is to separate the torn edge of the next advanced free end portion of the strip from the tear-edge means.

Another object is the provision of a side wall panel disposed in advance of the tear-edge means against which the strip may be pressed and held while a sheet is being torn from the strip.

Another object is to stabilize the unwinding of the supply roll during the dispensing operation by keeping it under a steady state unwinding condition.

Another object is the provision of a hand-held carton

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dispenser having a cover lid of a trunk-lid type which embraces substantially two sides of the carton dispenser and which also covers and protects the tear-edge means.

Another object is to press the withdrawn strip against the tear-edge means and thereby hold the same firmly while the strip is torn off.

Another object is the provision, in a carton dispenser, of lid means having a longitudinal panel edge portion positionable over said tear-edge means and depressible against a withdrawn strip passing over the tear-edge means for holding the strip against said tear-edge means while the same is being torn off.

Another object is the provision, in a carton dispenser, of a trunk-lid which may be easily opened and closed by the simple exercise of the thumb during the dispensing operation.

Another object is to prevent the supply roll, within limits, from "rolling sidewise" within the carton.

Another object is to prevent the supply roll from rolling sidewise within the carton dispenser by engaging the inside surface of the tube upon which the strip is wound and holding same against sidewise movement.

Another object is to limit the amount that the next advanced free end portion of the strip may swing away from the tear-edge means after a sheet has been torn off.

Another object is to hold the strip in a steady state condition throughout a wide extent thereof when the same is being torn off.

Another object is to hold the strip in a steady state condition throughout a wide extent thereof against the tear-edge means when the same is being torn off.

Another object is to provide a high space above the tear-edge means into which the free end portion of the strip may present itself, whereby the free end portion may be grasped without the possibility of cutting one's finger on the tear-edge means when grasping the strip.

Another object is to remove one corner of the carton dispenser whereby the tear-edge means may be positioned farther away from the free end portion of the strip, thereby facilitating the easy grasping of the strip without the possibility of cutting one's finger on the tear-edge means.

Another object is to place the carton dispenser in an upside-down position when storing the same on a shelf or in a cupboard when not in use.

Another object is to protect the withdrawn end of the strip when the carton-dispenser is placed on a shelf or in a cupboard when not in use.

Another object is the provision of hand-held carton dispenser which may be initially opened easily.

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 top view of my hand-held carton dispenser showing the flange panel of the trunk-lid and the location of the glue spots which are provided on the underneath side of the flange panel of the trunk-lid and which are disposed to be separated upon initially opening the carton, the view being substantially one-half the size of a carton-dispenser;

FIGURE 2 is a rear view of my hand-held carton dispenser showing the main panel of the trunk-lid and the location of the longitudinal hinge therefor at a place other than at a longitudinal corner of the carton;

FIGURE 3 is a plan view of a paperboard blank from which my hand-held carton dispenser may be constructed;

FIGURE 4 is a cross-sectional view taken along the line 4-4 of FIGURE 1 showing the trunk-lid in its closed position with the flanges panel covering and protecting the tear-edge means, the view being substantially two times the size of FIGURE 1;

FIGURE 5 is a cross-sectional fragmentary view taken along the line 5—5 of FIGURE 2, the view being substantially two times the size of FIGURE 2;

FIGURE 6 is a top view of my hand-held carton dispenser looking upon the flange panel of the trunk-lid with certain parts removed and with other parts shown in section to illustrate the invention in more detail;

FIGURE 7 is a fragmentary cross-sectional view taken along the line 7—7 of FIGURE 6, showing how hingable tab means are adapted to push up against the underneath side of the next advanced free end portion of the strip for separating the torn edge thereof from the tear-edge means;

FIGURES 8 to 14, inclusive, are diagrammatical views showing how a strip of material is torn off and dispensed, the FIGURES 12, 13 and 14 being diagrammatical modifications; and

FIGURES 15, 16 and 17, respectively, show structural features of the diagrammatical modification views of FIGURES 12, 13 and 14.

With reference to the drawings, and particularly FIGURE 4, my hand-held carton dispenser comprises substantially a square box 20 having a tear-edge means 50 and a lid 21 preferably of the trunk-lid type which is hinged along a longitudinal hinge line 22. The size of the box is made to accommodate supply rolls of various lengths and diameters. The supply roll is identified by the reference character 24 and the tube upon which the strip is wound is identified by the reference character 25.

Viewing FIGURE 3 from the bottom to the top, the blank from which the box 20 is made has a top side wall panel 26 with an inside flap 27, a front side wall panel 28, a bottom side wall panel 29, and a narrow back side wall panel 30 to which the trunk-lid 21 is hingably connected along the longitudinal hinge line 22. The trunk-lid 21 comprises a main rear panel 31 and a top flange or lid panel 32. The top side wall panel 26 has two end panels 35; the front side wall panel 28 has two end panels 36; and the bottom side wall panel 29 has two end panels 37. The narrow back side wall panel 30 has two small end tabs 39 which are adapted to be folded against and glued to the end panels (see FIGURE 5). The two ends of the box are folded alike; the end panel 35 is on the inside; the end panel 36 is in the middle; and the end panel 37 is on the outside (see FIGURE 6). These three end panels 35, 36 and 37 are glued together.

As shown in FIGURES 3, 4 and 6, the inside end panels 35 each have a substantially semicircular end tab 44 hingably cut therefrom. These end tabs are not glued to the end panels but are integrally hinged about a hinge line 45 and thus are disposed to project into the inside diameter of the tube 25 of the supply roll. The supply roll is thus held against rolling sidewise within the carton by these end tabs 44.

The main panel 31 of the trunk-lid 21 has two down-turned end flanges 40 and the flange panel 32 of the trunk-lid 21 has two down-turned end flanges 41. The end flanges 40 and 41 at each end of the trunk-lid are folded against each other along the respective dotted fold lines 42 and 43, and then they are glued together to make the end flanges of the trunk-lid. The end flange 40 is on the inside and the end flange 41 is on the outside (see FIGURE 6). The top flange panel 32 of the trunk-lid has a skirt 38 which extends beyond the end flanges 41 and overlaps the top side wall panel 26 as well as the tear-edge means 50. The longitudinal end terminal of the skirt comprises a longitudinal panel edge portion 48 positionable over the tear-edge means 50 and is depressible against a withdrawn strip passing over the tear-edge means for holding the strip in a steady state condition while it is being torn off. The longitudinal panel edge portion 48 has a longitudinal edge which is identified by the reference character 33.

In the dispensing operation, the skirt 38 is depressed against both the side wall panel 26 and the tear-edge

means 50 and thereby holds the withdrawn strip firmly therebetween in a steady state condition, as the strip is being torn off. The pressure applied against the strip while it is being torn off extends throughout a wide portion of the strip and facilitates the easy tearing of the strip. The firmness enables the operator to make a clear and easy cut.

In order to stabilize the steady state unwinding condition of the supply roll, the top side wall panel 26 is provided with an inside flap 27 which is hingedly folded back on the panel 26 along a longitudinal hinge-fold line 49 which possesses a considerable amount of resiliency inherent in the paperboard from which the carton is made. This resiliency presses the inside flap 27 against the outside layer of the supply roll (see FIGURE 4). There is considerable "give" to the inside flap 27 and thus it continues to press against the outside layer of the supply roll as the diameter becomes smaller through use. The inside flap 27 also acts to strengthen or reinforce the top side wall panel 26 against curving or bending down too much, particularly in the longitudinal central region thereof.

In general, my carton dispenser comprises an elongated box including side wall means and end wall means. The side wall means has at least first and second substantially diagonally opposite longitudinal corners 46 and 47 (see FIGURE 4). The tear-edge means 50, which preferably comprises a thin metal strip having sharp teeth, is disposed along the longitudinal corner 46. The top side wall panel 26 is disposed in advance of the tear-edge means 50 and the withdrawn strip of material from the supply roll is disposed to pass over same before reaching the tear-edge means 50. The top side wall panel 26 has first and second longitudinal edges which define the width thereof. The first longitudinal edge is connected to the longitudinal corner 46 and the second longitudinal edge constitutes the longitudinal hinge-fold line 49 about which the inside flap 27 is folded back against the panel 26. The narrow back side wall panel 30 extends away from the longitudinal corner 47 in a direction substantially perpendicular to the top side wall panel 26. The narrow back side wall panel 30 has first and second longitudinal edges which define the width thereof. The first longitudinal edge is connected to the longitudinal corner 47 and the second longitudinal edge constitutes the longitudinal hinge line 22 to which the trunk-lid 21 is hingably connected. The longitudinal space between the longitudinal hinge line 22 and the longitudinal hinge-fold line 49 define the sides of a longitudinal opening through which the supply roll may be mounted in the box and from which the free end portion of the strip may be withdrawn. The supply roll is disposed for rotation in the carton dispenser as the strip is withdrawn therefrom. The main panel 31 of the trunk-lid 21, when closed, lies substantially in the same plane as the narrow back side wall panel 30 with the skirt 38 of the flange panel 32 overlapping the top side wall panel 26 (see FIGURE 4). The longitudinal panel edge portion 48 of the skirt 38 overlaps the tear-edge means 50 with the longitudinal edge 33 slightly extending beyond the tear-edge means 50 to protect the hand from being cut thereby when handling the dispenser. In shipping, the underneath surface of the skirt portion 38 of the flange panel 32 is glued to the outer surface of the top side wall panel 26 by means of glue spots 51, which may be readily separated in initially opening the carton dispenser.

When a sheet of material is torn from the strip wound on the supply roll, the torn edge of the next advanced free end portion of the strip may tend to stick in some instances to the tear-edge means 50. To assure that this "sticking" is obviated, the top side wall panel 26 is provided with spring-like stripper tabs 54 which are hingably cut from the panel (see FIGURES 6 and 7). The free end of the stripper tabs 54 extend toward the tear-edge means 50. By reason of the resiliency of the paperboard

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of which the carton is made, these tabs tend to push up against the underneath surface of the next advanced free end portion of the strip and separate or release the torn edge from the tear-edge means 50. Other means may be employed to separate the torn edge of the next advanced free end portion of the strip from the tear-edge means, but the stripper tabs operate automatically and are very efficient. In some instances, without the stripper tabs, the torn edge of the next advanced free end portion of the strip automatically becomes separated on its own accord from the tear-edge means 50. In other words, without the stripper tabs, the "sticking" does not always occur following each tearing operation, but when it does occur, the stripper tabs of my invention are always available when needed.

In the method claims, the step which calls for "separating the torn edge of the next advanced free end portion of the strip from the tear-edge" includes both instances where the torn edge is separated from the tear-edge on its own accord without the aid of the stripper tab means and when the torn edge is separated from the tear-edge means with the aid of the stripper tab means.

The dispensing operation may be explained with reference to FIGURES 8 to 14, inclusive. In this description, it will be assumed that the carton dispenser will have been used at least once before and that the skirt 38 of the flange panel 32 of the trunk-lid 21 has been separated from the top side wall panel 26 of the carton. This separating operation is a simple one, as the housewife has only to grasp the front edge 33 of the flange panel 32 of the trunk-lid, which slightly overhangs the tear-edge means 50 and lifts up on the same, thus automatically separating the glue spots 51. The trunk-lid is now free to be raised, whereby the housewife may gain access to the free end portion of the strip wound on the supply roll. Under the assumption that the carton has been once used, the next advanced free end portion of the strip, which is shown by a dash-dot line, is disposed between the outer surface of the top side wall panel 26 and the inner surface of the overlapping skirt portion 38 of the flange panel 32 of the closed trunk-lid, as shown in FIGURE 8.

By reason of the inherent resiliency of the paperboard from which the carton is made, the hinge-line 22 about which the trunk-lid 21 is hinged tends to spring or keep the trunk-lid in a partially held open position when the carton is not in use, unless means are provided otherwise to hold the trunk-lid closed. One simple way to restrain the trunk-lid in its closed position when not in use is to place or store the carton in an upside-down position on a shelf or in a cupboard. The weight of the carton and the supply roll thus hold the trunk-lid in its closed position. Preferably, the carton dispenser may be placed on a shelf or in a cupboard in an upside-down position when not in use, as shown in FIGURE 8. The end tabs 44 function to keep the supply roll from falling out of the carton when handling or when turning the carton upside-down.

In picking up the carton from a position as shown in FIGURE 8 (which will normally be the position in which it is stored on a shelf or other place in a cupboard when not in use), the housewife will first place the carton in her left hand, with the bottom side wall panel 29 resting upon the four fingers and palm of the left hand while the forepart of the left thumb is swung over the top surface of the flange panel 32 of the trunk-lid for controlling its movements. The forepart of the left thumb will normally engage the top surface of the flange panel 32 in the region where the arrows 65 are shown in FIGURES 9, 10 and 11. This position is a natural position for the left thumb, free from any awkward feeling. The left-hand end of the carton as shown in FIGURE 1 will be pointing toward the body of the operator with the right-hand end thereof extending away from the body at an elevated position with respect to

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the left-hand end. In other words, the carton is held in front of the body at an upwardly sloping position with respect to the horizontal. In FIGURES 10 and 11, the strip, as a result of its previous use, is shown leaving the supply roll along a transverse tangential line located in the region above the level of the center of the supply roll, the end view of said line appearing as a dot indicated by the reference character 52. The description will be made with reference to a right-handed person. For a left-handed person, the description will be the same except that the FIGURES 8 to 14 will be in reverse, as the reverse end of the carton will be next to the body for a left-handed person.

In dispensing a sheet of material, the operator raises the flange panel 32 of the trunk-lid from the closed position to the raised position shown in FIGURE 9. The raising of the flange panel 32 of the trunk-lid is done simply by operating the left thumb which is a very natural movement. The inherent resiliency of the hinge-line 22 also aids the thumb in raising the trunk-lid. In raising the flange panel 32 to a position similar to that shown in FIGURE 9, the next advanced free end portion of the strip of material will automatically rise along with the skirt portion 38 of the flange panel 32 of the trunk-lid and occupy a position similar to one of the three positions shown in FIGURE 9. The raised strip has a natural curvature due to being wound on the supply roll. Apparently the resiliency is the result of this curvature. In other words, the mere raising of the flange panel 32 of the trunk-lid will cause the next advanced free end portion of the strip to present itself for easy grasping by the fingers and thumb of the right hand. The raising of the next advanced free end portion of the strip does not depend upon any physical engagement by the trunk-lid. The next advanced free end portion merely follows the travel of the skirt portion 38 of the flange panel 32 of the trunk-lid as it is raised. The natural position at which the left hand tends to hold the carton dispenser at the time the flange panel 32 of the trunk-lid is raised by the left thumb is substantially the same as that shown in FIGURE 9; namely, at a counter-clockwise inclined position. Here, it is noted that the carton dispenser is normally held in a tilted counter-clockwise position from the horizontal so that the tear-edge means 50 is positioned at least at a level where the next advanced free end portion of the strip, through the force of its own resiliency in opposition to gravity, acts to unwind itself from the supply roll in the reverse direction and at the same time shift the transverse tangential line from that at 52 in FIGURES 10 and 11 to that of a new location of 53 in FIGURE 9. In other words, the transverse tangential line at 52 is at a level above the center of the supply roll, whereas in FIGURE 9 the transverse tangential line has been shifted to a new advanced location at 53 which is below the level of the center of the supply roll. The action which results from the resiliency of the strip is such that the next advanced free end portion of the strip is caused to swing as a cantilever about the new transverse tangential line 53 in a direction generally upwardly and away from the tear-edge means 50 where it may be easily grasped by the right hand for starting the dispensing operation.

When the flange panel 32 is raised to a wide open position as shown in FIGURE 9, the curvature of the strip tends to swing out and contact the hinge-line 22 which serves to support or stabilize the strip. The hinge-line 22 has the effect of reducing the length of the cantilever, with the result that the strip seems to extend more erect than it would otherwise do in the absence of the hinge-line 22. In the wide open position of the trunk-lid in FIGURE 9, the hinge-line 22 also acts to stabilize the strip so that it does not hug too closely to the underside of the flange panel 32 of the trunk-lid, thus leaving a space therebetween whereby the fingers and thumb of the right hand may easily grasp the end thereof. In addition, the hinge-line 22, since it is spaced from the corner

47, has the effect of shortening the swing of the trunk-lid.

In some instances, the torn edge of the next advanced free end portion of the strip may tend to stick to the tear-edge means 50. In this event, the stripper tabs 54 will act to separate or release the torn edge, whereupon the released strip will then swing upwardly from the tear-edge means where it may be readily grasped by the right hand for withdrawing same. Thus, with my carton dispenser, the next advanced free end portion of the strip may be caused to swing as a cantilever about the new transverse tangential line by tilting or rocking the carton, whereby the next advanced free end portion of the strip may be easily grasped for starting the next dispensing operation.

With aluminum foil, it is found that the next advanced free end portion of the strip will begin to swing upwardly and away from the tear-edge means when the carton is so tilted that the tear-edge means 50 is positioned at least at a level above the center of the supply roll. In other words, the force of the resiliency begins to overcome gravity when the carton is tilted to a position where the tear-edge means 50 is at least at a level above the center of the supply roll. Of course, the higher the tear-edge means 50 is raised or tilted, such as for example, where the tear-edge means 50 is at least at a level above the top of the supply roll in FIGURE 9, the more the resiliency will overcome gravity and thus the higher the next advanced free end portion will elevate itself. Thus, with my carton dispenser, the next advanced free end portion readily and automatically presents itself for easy grasping by the right hand to start the dispensing operation by the mere raising of the flange panel 32 of the trunk-lid by the left thumb, as shown in FIGURE 9.

After the operator has grasped with her right hand the next advanced free end portion, it may then be tangentially withdrawn from the supply roll, as shown in FIGURE 10. In withdrawing the next advanced free end portion of the strip from the supply roll, there is a natural tendency for the left thumb to close the trunk-lid slightly as shown in FIGURE 10. The withdrawn strip first passes over the curved edge of the hinge-fold line 49, then over the top side wall panel 26, and lastly the tear-edge means 50, until a given length overhangs the tear-edge means 50, at which time the left thumb now closes the skirt portion 38 of the flange panel 32 down against the top side wall panel 26 with the withdrawn strip held therebetween in a steady state condition (see FIGURE 11). The pressure of the left thumb (see arrows 65 in FIGURE 11) against the flange panel 32 of the trunk-lid, arrests the further advance of the withdrawn strip. With the left thumb still pressing down on the flange panel 32 of the trunk-lid, the overhanging length of the strip is severed into a separate sheet from that of the supply roll by pulling the withdrawn strip against the tear-edge means 50 until the strip is completely torn thereacross. The arresting of the further advance of the strip by the downward pressure of the left thumb upon the flange panel 32 of the trunk-lid holds the withdrawn strip in a steady state condition while the sheet is being torn off. Under a steady state condition, the tear is clean-cut, free from any signs of a ragged edge. When the separate sheet has been torn off, the carton dispenser may be stored away upon a shelf or in a cupboard in the position shown in FIGURE 8, where it is ready for the next dispensing operation. Thus, with my carton dispenser, the housewife need not "pick around" in an effort to get hold of the next advanced free end portion of the strip in order to "get it started" for the next dispensing operation.

Preferably, the supply roll is prevented from rolling sidewise by the end tabs 44. As an alternative, the end tabs 44 may be dispensed with, in which case the narrow back side wall panel 30 will within limits prevent such sidewise roll. In the absence of the end tabs 44, should the housewife happen to raise the trunk-lid too high by

tilting or twisting the carton dispenser in a counter-clockwise direction too far where the corner 47 is considerably below the level of the bottom of the supply roll, the narrow back side wall panel 30 will act as an obstruction and prevent the supply roll from rolling sidewise out of the longitudinal opening upon the inside surface of the main panel 31 of the trunk-lid which it would otherwise tend to do if the trunk-lid were hinged along the longitudinal corner 47.

The withdrawn strip upon leaving the supply roll at the transverse tangential line at 52, first passes over the curved edge of the hinge-fold line 49 before it reaches the tear-edge means 50 (see FIGURE 11). As it passes over the curved edge of the hinge-fold line 49, the strip is caused to make a bend thereat. Preferably, the bend should not be too abrupt, because a sharp bend will end to destroy the natural curvature of the withdrawn strip. The bend should not be so sharp as to kink the natural curvature because if it does, the next advanced free end portion of the strip will tend to droop instead of flexing away from the tear-edge means 50. Preferably, the inside included angle at the bend should be greater than 130 degrees. In the drawings, the inside included angle is approximately 150 degrees.

As a further means to keep the next advanced free end portion from drooping whereby the length of the withdrawn strip beyond the kink becomes substantially dead weight, the width of the top side wall panel 26 is preferably about the same as the radius of the supply roll, or possibly less. Extra width to the panel 26 will increase the length of the drooped portion and add to the dead weight. To overcome this extra dead weight, the carton is required to be tilted an excessive amount counter-clockwise in order to make the next advanced free end portion of the strip to swing away from the tear-edge means 50 whereby it may be easily grasped for starting the dispensing operation.

In FIGURES 12 and 15, the skirt portion 38 of the flange panel 32 is shown as being foreshortened. The new longitudinal edge is identified by the reference character 34. The skirt portion may be foreshortened by providing a longitudinal tear-line at 34, so that when the housewife is initially opening the carton at the time she is separating the glue spots 51, she simply tears the advanced edge portion of the skirt portion off along the tear-line 34. The torn-off skirt portion is thus discarded. The FIGURE 15 shows fragmentary structural features of the diagrammatical view of FIGURE 12. The view is principally an end view of the carton showing a modified end panel construction having a first stepped edge 63, a second elevated stepped edge 64, and a vertical hooked edge 66 therebetween which serves as a catch for the flange panel 32 to hold it closed. The stepped edge 63 represents an end view of the outer surface of the top side wall panel 26 and is at the same level as the outer surface of the top side wall panel 26 shown in the previous views. The elevated stepped edge 64 is at an elevated level whereby when the flange panel 32 is held closed by the catch, it is still partially open with respect to the top side wall panel 26. In other words, the underneath surface of the flange panel 32 rests on top of the elevated stepped edge 64 which leaves a narrow longitudinal slit or opening 67 through which the strip may be withdrawn from the supply roll without raising the trunk-lid each time a sheet is torn off and dispensed. The width of the slit or opening 67 may be in the neighborhood of $\frac{1}{16}$ to $\frac{1}{8}$ of an inch. With this range of dimensions, the central longitudinal portion of the flange panel 32 which is flexible may still be depressed against the top side wall panel 26 for holding the strip therebetween when a sheet is being torn off. The opposite ends of the flange panel 32 next adjacent to the end flanges thereof are provided with slots 68 which latch over the vertical hooked edges 66 for holding the trunk-lid closed against the elevated stepped edges 64. In opening the trunk-lid, it is only

necessary to lift up on the longitudinal edge 34 until the flange panel is unlatched from the vertical hooked edges, whereupon the trunk-lid may be swung open. The vertical hooked edges are relatively stiff and sturdy and will not readily become mutilated as the panel construction is three panels thick, namely, panels 35, 36 and 37. In this carton dispenser of FIGURES 12 and 15, the trunk-lid is normally held in a partially open position with respect to the top side wall panel 26 whereby the next advanced free end portion of the strip is resiliently disposed in an elevated position above the top side wall panel 26 for easy grasping in starting the next dispensing operation.

In using the carton dispenser of FIGURES 12 and 15, the housewife need not raise the trunk-lid each time she wants to tear off a sheet as in FIGURE 9, because the next advanced free end portion is already disposed in an elevated position to be grasped when she picked up the dispenser for use. In FIGURE 12, the longitudinal edge 34 of the flange panel 32 restrains the free end portion of the strip from swinging as far away from the tear-edge means as it does in FIGURE 9. Because of this restraint, the transverse tangential line, indicated at 55 in FIGURE 12, is held in a position in the region above the level of the center of the supply roll.

Thus, the carton dispenser of FIGURES 12 and 15 may be stored by the housewife on a shelf or in a cupboard with the end of the withdrawn strip exposed, so that when she picks up the carton-dispenser again for use, the exposed strip is already in an elevated position to be grasped for starting the next dispensing operation.

FIGURES 13 and 16 represent a modification of the carton dispenser shown in FIGURES 12 and 15, in that the tear-line 34 in FIGURES 12 and 15 is replaced by a longitudinal hinge-line 57, in which case the skirt portion 38 is not discarded but is hingably retained as a flap member 61 which may be depressed by the thumb to hold the strip of material in a steady state condition while a sheet is being torn off. In FIGURES 13 and 16, the flap member 61 is preferably reinforced to make it stiffer by providing a double thickness thereto. The double thickness is provided by folding an extra panel 56 back against the skirt portion 38 about a longitudinal fold line 60. The panel 56 and the skirt portion 38 are preferably glued together. In all respects, the dispensing operation of the carton dispenser in FIGURES 13 and 16 is substantially the same as that for the carton dispenser in FIGURES 12 and 15, in that the next advanced free end portion of the strip is always ready in elevated position for use without raising the trunk-lid. The carton dispenser of FIGURES 13 and 16 may be stored upside-down, in which case the flap member 61 protects the next advanced free end portion of the strip as well as the tear-edge means 50.

FIGURES 14 and 17 show a modification of the carton dispenser in FIGURES 13 and 16, in that the longitudinal corner 46 of the carton dispenser has been cut off on an angle, whereby the tear-edge means 50 is lowered to give more room to grasp the free end portion of the strip. The left-hand longitudinal edge portion of the top side wall panel 26 is still retained in its normal flat position, but the remainder of the panel has been replaced by a longitudinal sloping panel 58 having the stripper tabs 54 provided thereon. In shipping, the flap member 61 is attached to the sloping panel 58 by a series of longitudinal spaced glue spots which may be readily separated by lifting up on the flap member. The flap member 61 is long enough to overlap the tear-edge means 50 to protect same. The operation of the carton of FIGURES 14 and 17 is the same as that for the carton in FIGURES 13 and 16, except that there is a higher longitudinal space to give more room in which to grasp the next advanced free end portion. In FIGURES 14 and 17, the longitudinal corner 46, even though it is cut off at an angle, is still considered to be substantially diagonally opposite the corner 47, as speci-

fied in some of the claims. In the drawings, the sloping panel 58 makes an inside included angle with respect to the front side wall panel 28 of approximately 120 degrees. Preferably, the inside included angle may reside in a range of approximately 100 to 140 degrees.

Preferably, the carton in FIGURES 14 and 17 may be tilted at an increased angle in a counter-clockwise direction over that in the previous figures in order to elevate the next advanced free end portion of the strip so that it may resiliently swing away from the tear-edge means 50.

In the method claims, the step of "positioning the advanced free end portion of the strip to at least a level where the released strip through the force of its own resiliency acts to unwind itself from the supply roll in a reverse direction etc." follows the step of "separating the torn edge of the next advanced free end portion of the strip from the tear-edge." In practice, the step of "positioning" may precede any one or all the other steps, in that the act of "positioning" may be continuously occurring while the previous steps are being carried out. Even though the step of "positioning" may have taken place while the previous steps were being carried out, the method claims are to be construed as covering this situation, notwithstanding the fact that the step of "positioning" follows the step of "separating." The sequence is important only to the extent that the step of "positioning" must at least be in existence after the step of "separating."

In all of applicant's dispensing operations, the resiliency of the strip of material is utilized to facilitate the easy grasping of the next advanced free end portion. In those dispensing operations where the trunk-lid is opened and then closed each time a sheet is torn off, the resiliency is utilized to cause the free end portion of the strip to follow the opening of the trunk-lid whereby the strip presents itself for easy grasping. Here, the inside surface of the trunk-lid constitutes a "stop" or "limit" surface beyond which the resilient strip cannot swing. In those dispensing operations where the trunk-lid is held partially open with respect to the top side wall panel 26, the resiliency is utilized to cause the free end portion of the strip to engage a longitudinal edge, such as the longitudinal edge 34 in FIGURES 12 and 15, and the longitudinal hinge-line 57 in FIGURES 13 and 16 and FIGURES 14 and 17. In these figures, the longitudinal edge or hinge-line constitutes a "stop" or "limit" surface beyond which the resilient strip cannot swing. Thus, all of my carton dispensers employ "stop" or "limit" means beyond which the resilient strip may not swing. The act of limiting the extent to which the resilient strip may swing is a part of the method. As pointed out before, the hinge-line 22 also acts to limit the amount that the free end portion of the strip may swing.

In the method claims, the term "material" includes such materials which possess in their wound state on the supply roll a resiliency which tends to urge the next advanced free end portion thereof to unwind itself in a reverse direction from the supply roll and further which tends to over-balance gravity. Aluminum foil is included within the term "material." So also is high grade resilient waxed paper, or the combination of foil and paper.

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

Although this invention has been described in its preferred form and preferred practice with a certain degree of particularity, it is understood that the present disclosure of the preferred form and preferred practice has been made only by way of example and that numerous changes in the details of construction and combination and arrangement of parts and steps 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 having tear-edge means by which sheets may be torn from the free end portion of a strip

wound on a supply roll mounted within the carton dispenser and by which the next advanced free end portion of the strip may swing away from the tear-edge means whereby it may be easily grasped for starting the next dispensing operation, said carton dispenser comprising an elongated hollow box including side wall means and end wall means, said side wall means having at least first and second substantially diagonally opposite longitudinal corners and a longitudinal opening through which said supply roll may be mounted in said box, said box having at least first and second opposed sides and third and fourth opposed sides with said first and third sides meeting to define said first longitudinal corner and with said second and fourth sides meeting to define said second longitudinal corner, said tear-edge means disposed along said first corner, said side wall means also including at least first and second side wall panels with each panel having first and second edges, said first side wall panel lying substantially in a plane of said third side of said box and being disposed in advance of said tear-edge means with said first edge thereof being connected to said first corner and with said second edge thereof defining one side of said longitudinal opening, said second side wall panel lying substantially in the plane of said second side of said box and extending away from said second corner in a direction toward said third side of said box with said first edge of said second panel being connected to said second corner and with said second edge thereof defining the other side of said longitudinal opening, said second edge of said first side wall panel and said second edge of said second side wall panel being spaced apart from each other and defining the width of said longitudinal opening having a dimension greater than the diameter of said supply roll, and a lid member having a main panel and a flange panel, said main panel being hingedly connected to said second edge of said second side wall panel and when closed lying substantially in the same plane as said second side wall panel with said flange panel overlapping said first side wall panel, said second side wall panel and said main panel of said lid constituting said second side of said box.

2. The structure of claim 1, wherein said first side wall panel has a width approximately the same as the radius of the supply roll whereby said withdrawn strip in passing

over said second edge of said first side wall panel makes a bend having an inside included angle greater than 130 degrees.

3. The structure of claim 1, wherein said box has limit means against which said next advanced free end portion of the strip may engage to limit the extent to which it may swing away from the tear-edge means.

4. The structure as claimed in claim 1, wherein said lid means has a longitudinal edge spaced from said first side wall panel and defining with said first side wall panel a longitudinal opening through which said free end portion of said strip may be withdrawn, said limit means including said longitudinal edge.

5. The structure as claimed in claim 1, wherein said lid means has an inside surface, said limit means including said inside surface of said lid means in its open position.

6. The structure of claim 1, wherein said side wall panels also includes a third side wall panel meeting with said first side wall panel and defining said first longitudinal corner, said first and third side wall panels at said first longitudinal corner having an inside included angle residing in a range from approximately 100 to 140 degrees.

7. The structure of claim 1, wherein said end wall means has tab means hingedly connected thereto and extending within the supply roll to hold said supply roll within said box.

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