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(54) **SHEET DISPENSING CARTON**

(57) **ABSTRACT**

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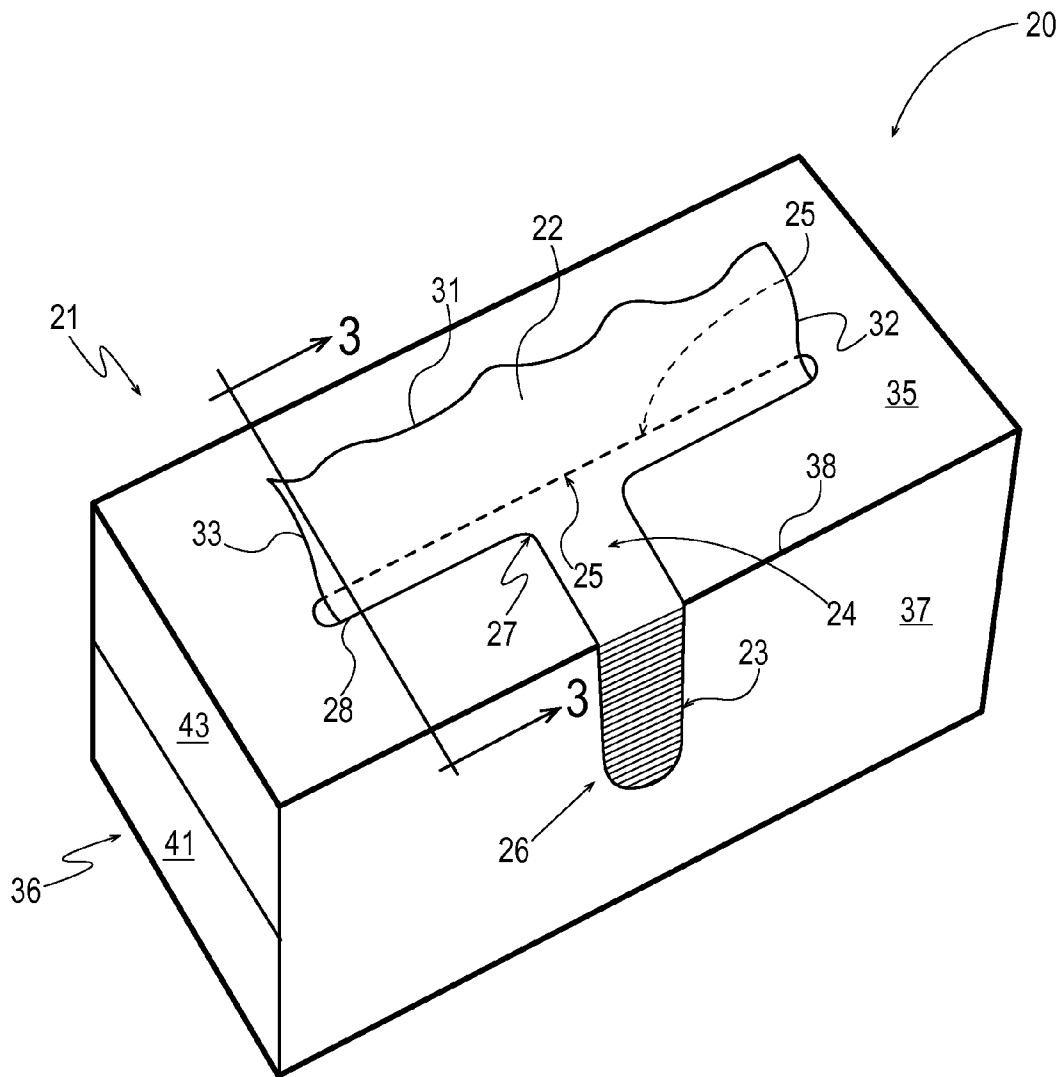
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A dispensing carton for interfolded sheets is disclosed. The carton has integral stationary means for enabling dispensing of the sheets through a single dispensing opening in a stationary wall portion of the carton to provide substantially droop-free pop-up dispensing of one sheet at a time. The carton has top, front, rear, bottom and end walls. The means for dispensing has means for defining a "T"-shaped dispensing opening having an elongate head portion which is centrally disposed in the top wall of the carton and which has a linear back edge, a stem portion that extends downwardly through a medial portion of the front wall of the carton, and a flared portion having arcuate edges disposed intermediate the head portion and the stem portion. The opening is configured to be sufficiently constrictive to enable substantially droop-free pop-up dispensing of one sheet at a time.



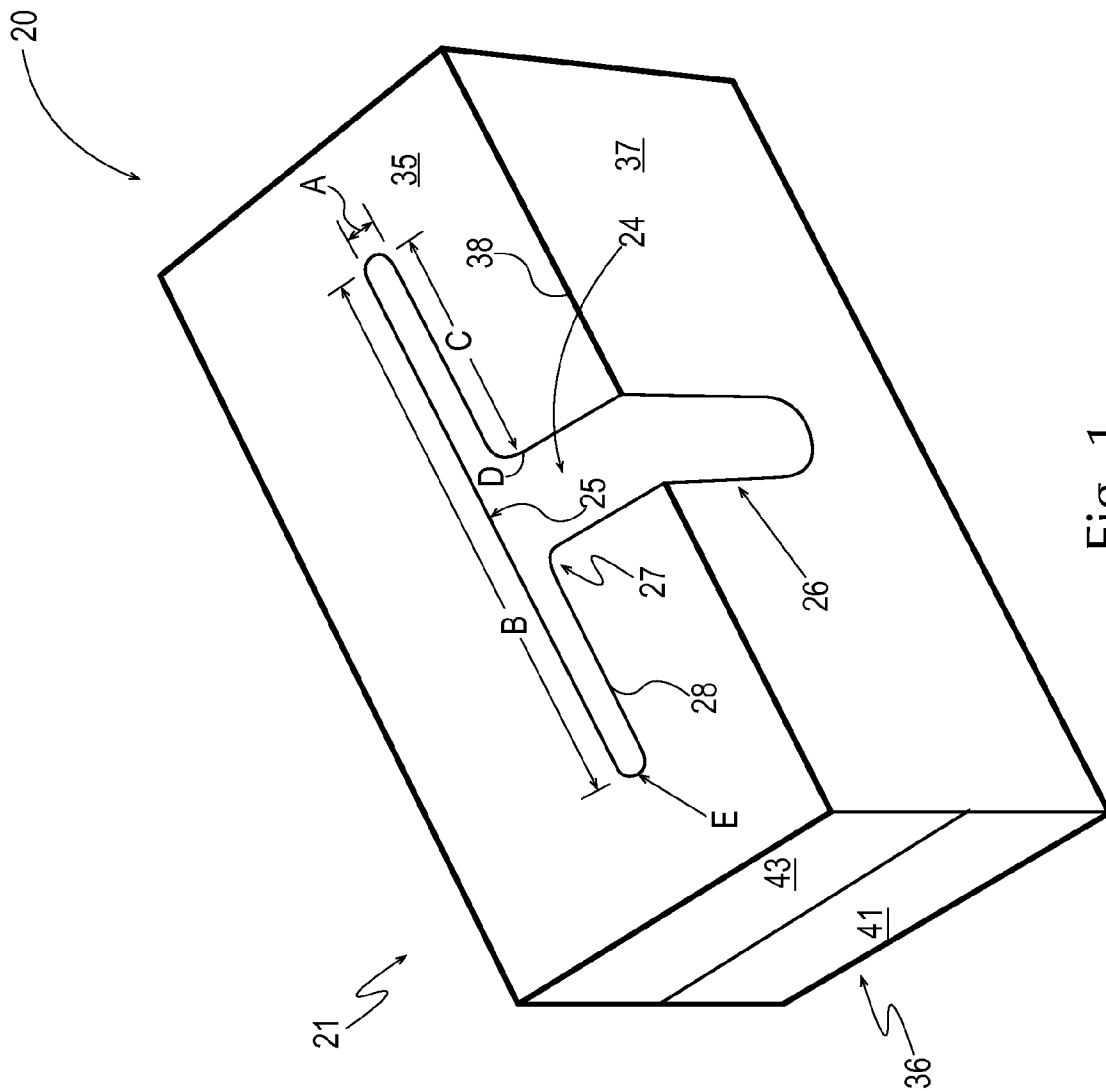


Fig. 1

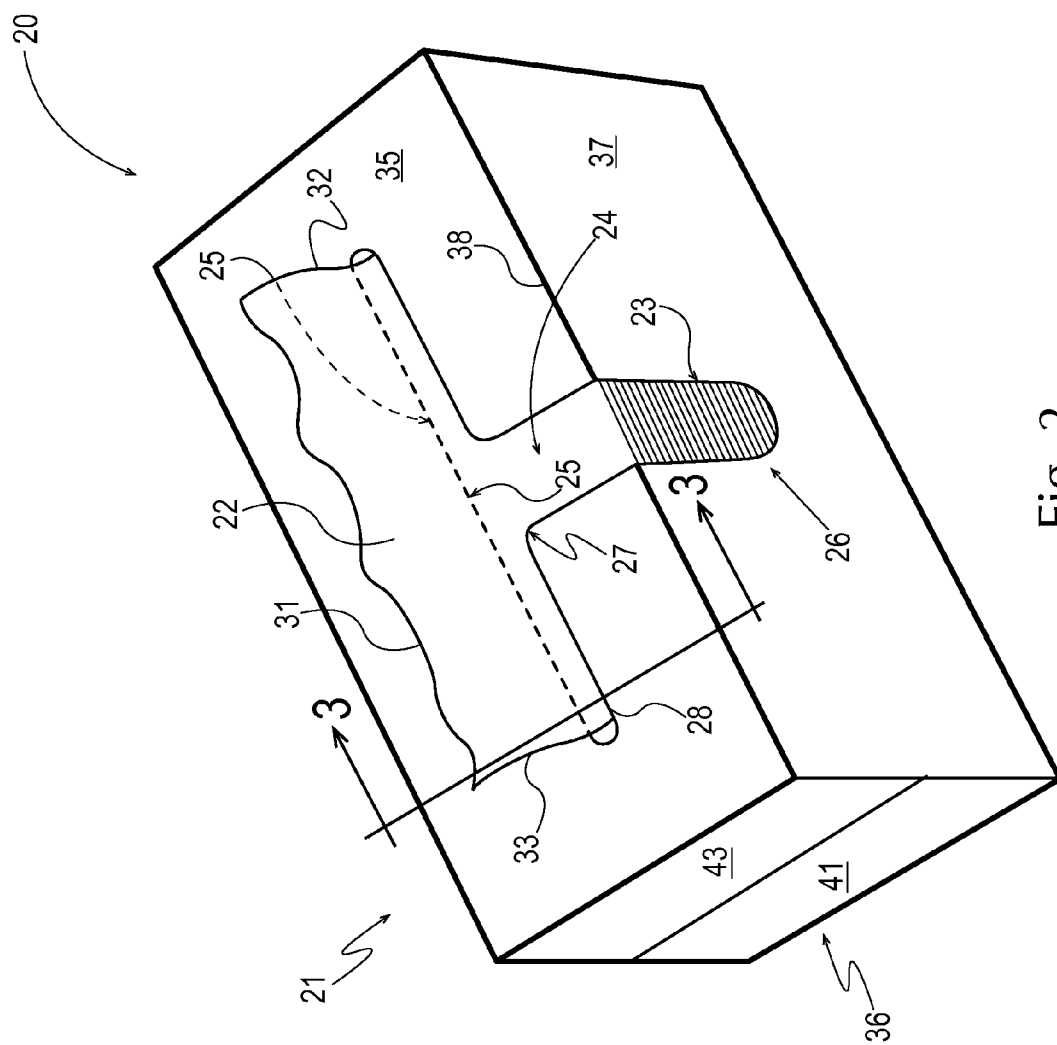


Fig. 2

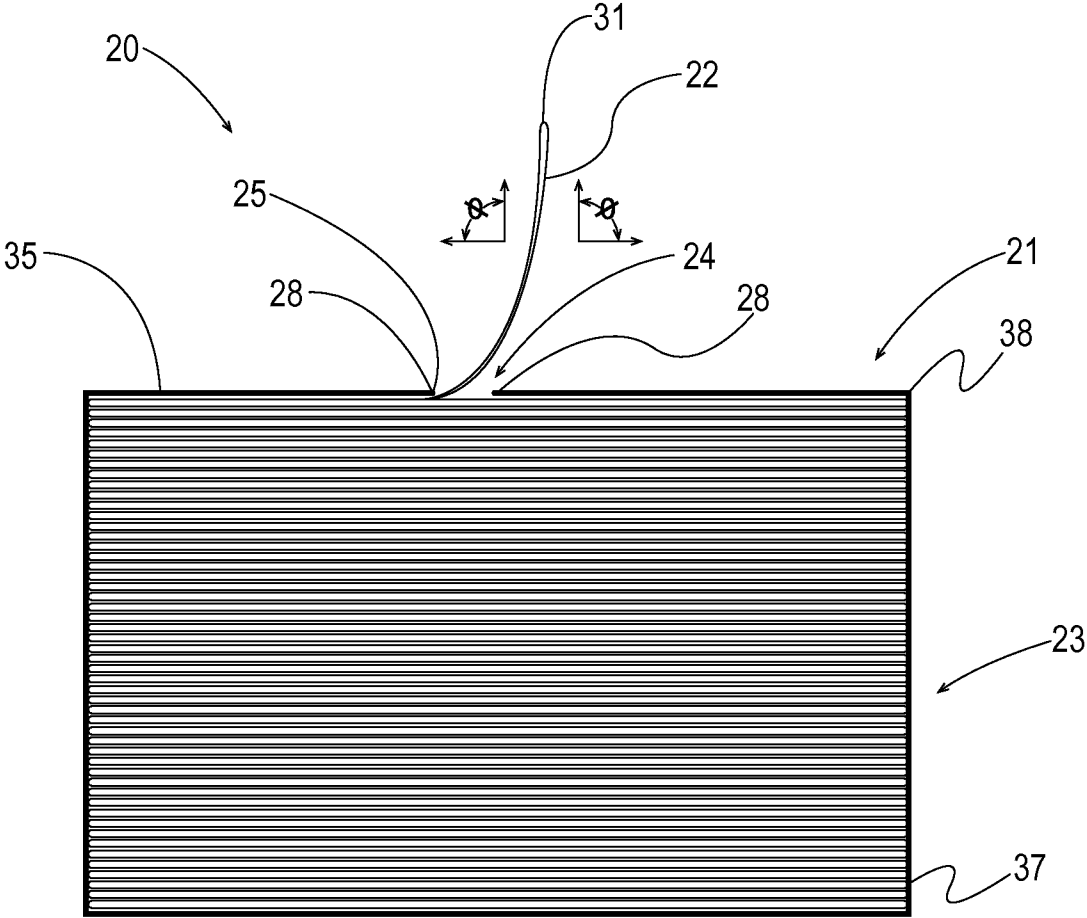


Fig. 3

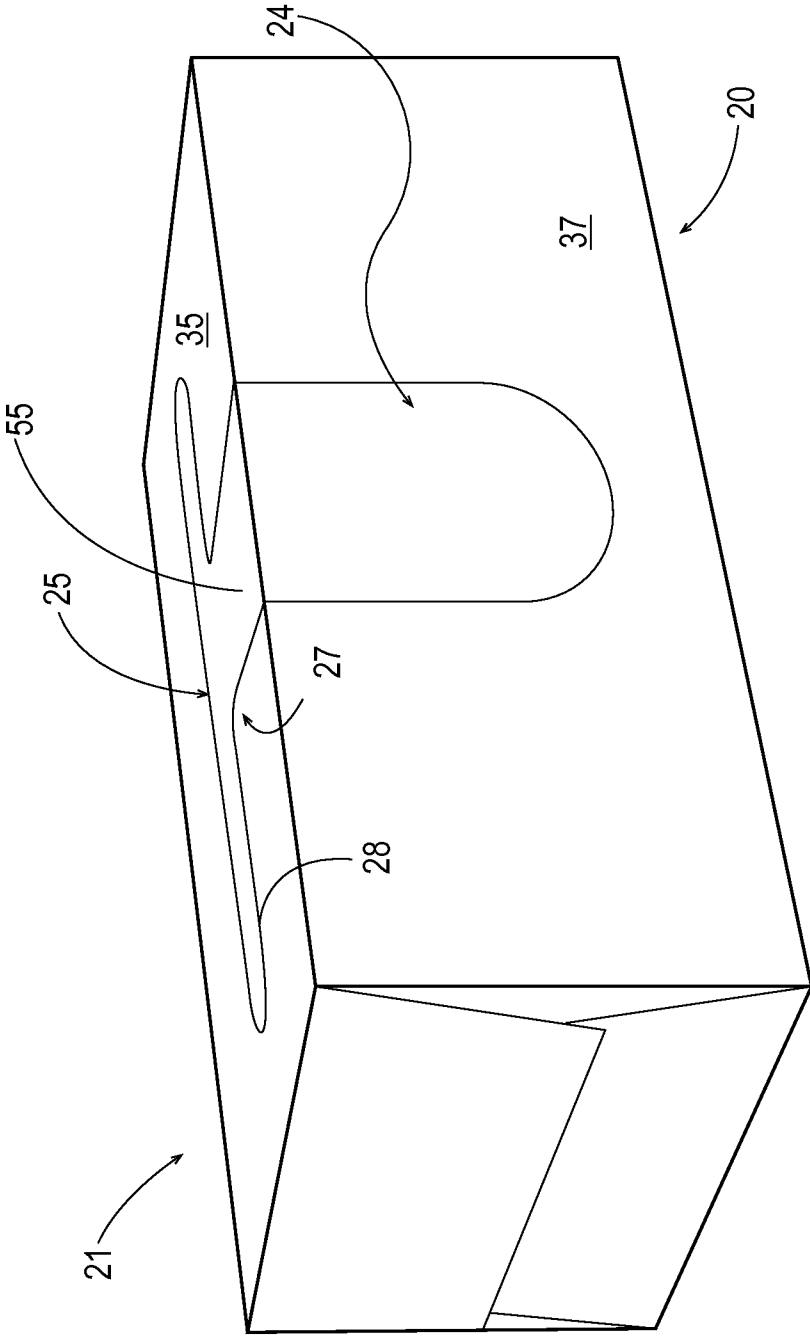


Fig. 4

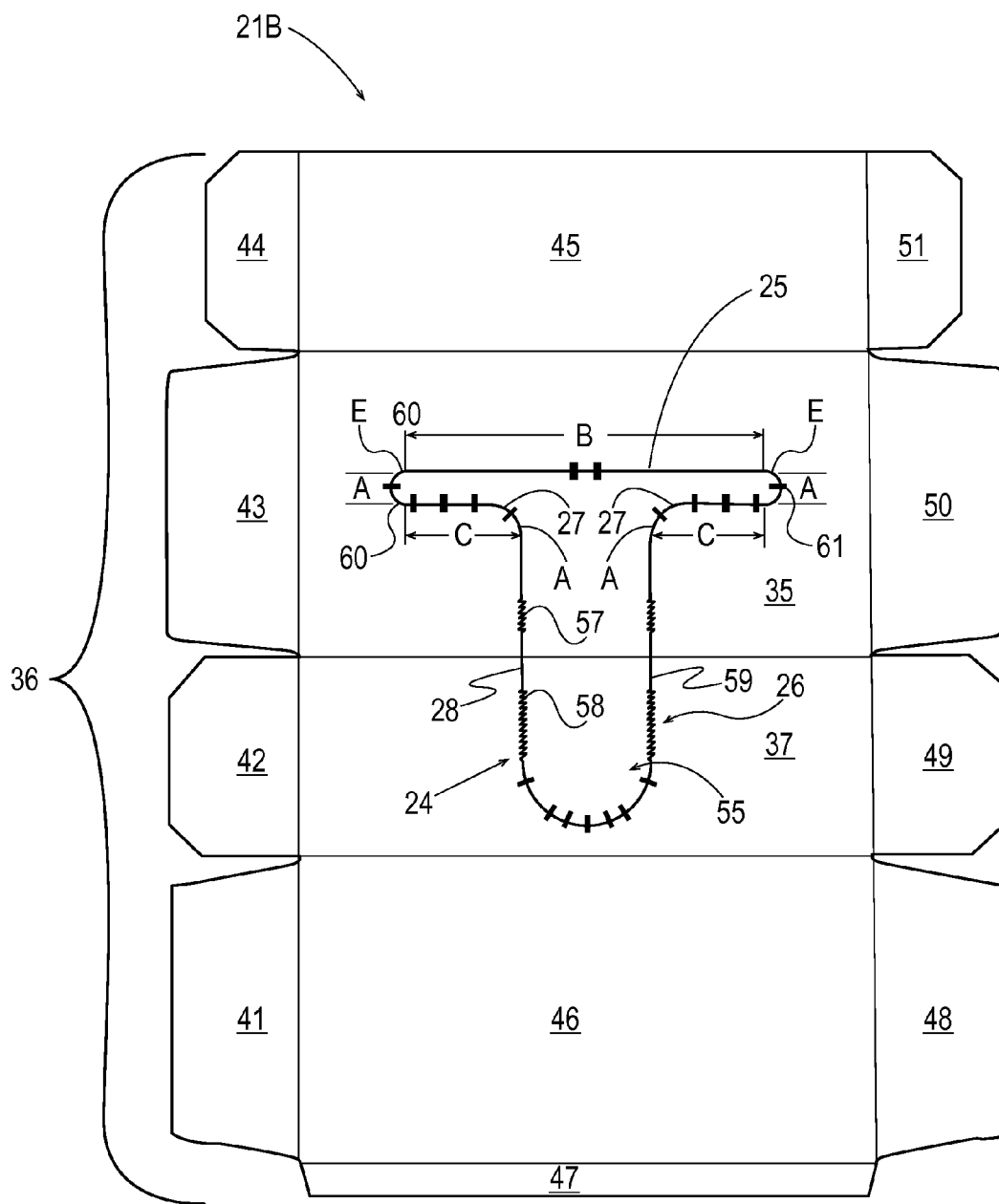


Fig. 5

SHEET DISPENSING CARTON

FIELD OF THE INVENTION

[0001] The present disclosure relates to dispensing packages and cartons for stacked and/or interfolded sheet materials such as facial tissues. More particularly, this disclosure pertains to packages and cartons configured to dispense stacked and interfolded sheets through a single dispensing opening with improved sheet-to-sheet stand-up height dispensing uniformity.

BACKGROUND OF THE INVENTION

[0002] Packages for containing and dispensing stacked and/or interleaved sheet materials disposed inside carton board cartons can generally be divided into two principal types. The first type enables stacked and interfolded sheets to “pop-up” to dispense through an opening in the top wall of the carton. Such pop-up dispensers provide partial withdrawal of the next successive tissue upon pulling sheets out one at a time from the carton. The second type of carton facilitates dispensing of a stack of sheets that are generally not interfolded by providing an opening in one at least one of the carton walls to enable a user to reach into the carton and remove one or more of the sheets at a time. This latter type of carton is commonly known as a “reach-in” carton. Typically, a reach-in carton does not facilitate “pop-up” dispensing of successive sheets. Frankly, innovation in the carton art has been rather stagnant until now. One form of prior art containers provide for the “pop-up” dispensing of tissues through an opening in the top wall of the carton. The dispensing opening in this type of carton is typically very large relative to the total area of the top wall. In some current embodiments of these “pop-up” carton types, a perforated non-decomposable film material is either disposed over or within the opening to effectively seal the tissues within the carton and provide a restrictive opening in order to aid in providing a partially dispensed tissue in an upright fashion.

[0003] Another form of prior art container is provided with a composite dispensing opening which comprises a narrow elongate slot in the top wall and a vertical slot in the front wall that are connected by a trapezoidal-shape transition zone in the top wall. This type of carton may generally be thought to provide an improved carton from which individual tissues may be sequentially dispensed, and from which a plurality of tissues may be conveniently removed as a unit. Such containers are provided in U.S. Pat. Nos. 3,144,961 and 3,272,385.

[0004] However, these “pop-up” cartons are problematic in that a high percentage of the interleaved tissues contained therein that are “popped-up” were found to have a very high tendency to droop or lay over on the carton rather than stand erect. Additionally, the observed stand-up height progressively diminishes in such cartons as tissues are dispensed likely due to the weight of the tissue falling back into the container and thereby at least partially retracting the next-to-be-dispensed tissue after the just dispensed tissue has been disengaged therefrom. Further, the use of non-biodegradable and non-renewable films in order to provide a restricted opening to facilitate dispensing adds additional manufacturing steps, increases the environmental footprint of the carton, and does little to address the retraction and lay-over issues associated with these cartons. Clearly these are drawbacks that negatively impact the perception of the container and the product contained therein by the consumer.

[0005] Another carton provides sequential dispensing of one sheet at a time. The package comprises a carton and a bundle of stacked and/or interleaved tissues. The dispensing opening is provided in the carton which comprises an opening in the top wall and/or side wall. In such cartons, the dispensing opening is sufficiently large to allow for the repeated intra-carton access to the stacked and/or interleaved tissues contained therein.

[0006] However such a carton is not designed to provide “pop-up” dispensing. The consumer must reach into the carton to withdraw succeeding tissues. This can present a hygiene issue due to the repeated contact of the consumer with the stack of tissues. Additionally, it was found that as tissues are sequentially dispensed from such cartons, if the leading portion of the next tissue dispenses at all, it generally lies across the top-front edge of the carton. Additionally, any partially dispensed sheets were found to have no appreciable stand-up height.

[0007] Thus, it would be understood by one of skill in the art that it would be clearly beneficial to provide a carton for dispensing stacked and/or interleaved sheet materials, such as facial tissues, that provides a more consistent and more erect partially dispensed sheet relative to prior art designs. It would also be advantageous to provide a dispensing carton that eliminates the need for additional non-decomposable packaging materials known to those of skill in the art as “pop-up” window film. Eliminating such non-decomposable packaging materials would indeed require fewer manufacturing steps and be eco-friendly by not requiring additional natural resource materials and reducing the environmental footprint at the time of disposal. Further it would be advantageous to provide a carton that increases tissue-to-tissue hygiene while facilitating increased access to the stack of sheets within a carton from the side of carton in the event that a partially dispensed is purposefully re-inserted into the carton.

SUMMARY OF THE INVENTION

[0008] The present disclosure provides for a dispensing carton for interfolded sheets. The carton has integral stationary means for enabling dispensing of the sheets through a single dispensing opening in a stationary wall portion of the carton. The carton provides substantially droop-free pop-up dispensing of one sheet at a time. The carton is sized to contain a bundle of interfolded sheets. The carton has top, front, rear, bottom and end walls. The means for dispensing has means for defining a “T”-shaped dispensing opening having an elongate head portion which is centrally disposed in the top wall of the carton and which has a linear back edge, a stem portion that extends downwardly through a medial portion of the front wall of the carton, and a flared portion having arcuate edges disposed intermediate the head portion and the stem portion. The opening is configured to be sufficiently constrictive with respect to withdrawing single sheets therethrough to enable substantially droop-free pop-up dispensing of one sheet at a time.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 is a perspective view of a facial tissue package embodiment of the present disclosure;

[0010] FIG. 2 is a perspective view of a facial tissue package embodiment of the present disclosure wherein a partially withdrawn tissue extends upwardly through the dispensing opening of the carton;

[0011] FIG. 3 is a cross-sectional view of the carton of FIG. 2 taken along the line 3-3;

[0012] FIG. 4 is a perspective view of a facial tissue package embodiment of the present disclosure suitable for sale;

[0013] FIG. 5 is a plan view of a cut and scored carton board blank from which, when erected, becomes a carton of the configuration shown in FIGS. 1 and 2.

DETAILED DESCRIPTION OF THE INVENTION

[0014] FIG. 1 shows an exemplary package 20 which is a preferred embodiment of the present invention. Exemplary package 20 generally provides a carton 21 containing a bundle (not shown) of sheets (not shown) of stacked and/or interleaved facial tissue paper. In an exemplary, but non-limiting embodiment, the carton 21 is provided with a dispensing opening 24 which is provided as a composite having a general "T"-shape which comprises a slotted elongate head portion 25, a generally elongate stem portion 26, and a radiused curved portion 27. The perimeter of the "T"-shaped dispensing opening 24 is designated lineament 28. In a preferred but non-limiting embodiment, lineament 28 can enable the tear-out removal of a panel disposed in carton 21 that has been outlined by a line of weakening having the configuration of lineament 28. Carton 21 also preferably comprises top wall 35, end wall 36, and front wall 37; and the top-front edge of the carton is designated 38. An exemplary embodiment of package 20 comprises a carton 21 that is sized and configured to accommodate a bundle of stacked and/or interleaved sheets 22. Such a carton 21 can be made from twenty or twenty two point carton board as would be understood by one of skill in the art.

[0015] As shown in FIG. 2, a visible sheet 22 is partially withdrawn from carton 21, and its edges which are visible in FIG. 1 are designated leading edge 31, first longitudinal side edge 32 and second longitudinal side edge 33. Stacked and or interleaved sheets 22 of bundle 23 are preferably "U"-folded and interleaved to enable pop-up dispensing of one tissue at a time. However, sheets 22 of bundle 23 may be folded (e.g., "C"-folded, "Z"-folded, "V"-folded, etc.) and/or interleaved in any manner understood by those of skill in the art.

[0016] As shown in FIG. 3, dispensing opening 24 is so configured and disposed so that removal of one sheet 22 at a time causes the leading edge 31 of the next successive sheet 22 to stand up away from the carton 21. In other words, dispensing opening 24 is configured so that sheet 22 has little or no droop and does not lie on the top wall 35 of the carton 21. Furthermore, the configuration and disposition of opening 24 in carton 21 is such that there is little to no sheet-to-sheet variation in stand-up height of successive sheets 22 as they are each dispensed from carton 21. In a preferred embodiment, the sheet 22 forms an angle, θ , relative to the top wall 35 of carton 21. In a preferred embodiment, θ ranges from about 80° to about 90°, or from about 80° to less than 90°, or from about 82° to less than 90°, or from 85° to less than 90°, or from about 87° to less than 90°.

[0017] Referring again to FIG. 1, while not wishing to be bound by a theory of operation, it is believed that limiting the length, B, of the head portion 25 of dispensing opening 24 to the range of from about sixty to about eighty percent of the length of the carton 21, and radiusing the ends of the head portion 25, E, thereof as further described herein causes the longitudinal edge portions 32, 33 of sheets 22 being withdrawn to curl in such a manner as to impart substantial columnar strength to the portion of the sheet 22 extending above the

top wall 35 of the carton 21 after the next previous sheet 22 has been fully removed and disassociated therefrom. That is, it is believed that shaping and positioning the opening 24 as disclosed herein precipitates sheet 22 to form a shape after partial dispensing that has sufficient columnar strength to substantially obviate and even eliminate drooping as herein infra. The stand-up height (alternatively referred to herein as "pop-up" height) is the vertical elevational difference between the highest portion of the leading edge 31 of upwardly extending sheet 22 and the top wall 35 of the carton 21.

[0018] FIG. 4 provides a perspective view of an exemplary but non-limiting carton 21 in a condition suitable for retail sale. It should be noticed that the carton 21 is provided with a removeable tear-out panel 55. The removeable tear-out panel 55 can be removed by the consumer post sale in order to provide access to the contents of carton 21 such as stacked sheets 22 disposed therein for individual dispensing as discussed herein.

[0019] FIG. 5 is a plan view of a carton blank 21B that is cut and scored to enable it to be erected and converted into carton 21 for dispensing sheets 22 shown in FIGS. 1 and 2. As shown in FIG. 5, an exemplary and non-limiting carton blank 21B suitable for forming carton 21 preferably comprises top wall 35, front wall 37, end flaps 41-44 which corporately make up end wall 36, back wall 45, bottom wall 46, rear glue flap 47, and end flaps 48-51. Additionally, carton 21 comprises a tear-out panel 55 which is defined by a line of weakening disposed within carton blank 21B having the shape of lineament 28. It should be understood by one of skill in the art that carton blank 21B can be provided with any number of sides and/or panels to form a suitable carton having the inventive opening 24 disclosed herein.

[0020] The length of the head portion 25 disposed in top wall 35 of carton 21 (i.e., the back edge of dispensing opening 24, FIG. 1) is designated B and was found to generally range from about 4.5 inches to about 6.5 inches in order to provide dispensing commensurate in scope with the discussion supra. The radius of the ends of head portion of panel 55 are designated E and were found to preferably be about 0.25 inches in order to provide dispensing commensurate in scope with the discussion supra. The radius of flared curved portion 27 having arcuate edges is designated D and were found to preferably be provided with a radius of about 0.50 inches in order to provide dispensing commensurate in scope with the discussion supra. The width of the elongate portion of "T"-shaped opening 24 disposed in top wall 35 is designated A and was found to generally range from about 0.375 inches to about 1.00 inches in order to provide dispensing commensurate in scope with the discussion supra. The length of the portion of opening 24 forming the remainder of the elongate portion of "T"-shaped opening 24 disposed in top wall 35 and extending from stem portion 26 to the terminus of the elongate, "T"-shaped portion of opening 24 disposed in top wall 35 is designated as C and was found to generally range from about 1.25 inches to about 1.75 inches in order to provide dispensing commensurate in scope with the discussion supra.

[0021] The "T"-shaped portion of the tear-out panel 55 is preferably equally spaced from each side edge of the top wall 35. As still further indicated in FIG. 5 in the form of an exemplary and non-limiting embodiment, while most of the edge of tear-out panel 55 defined by lineament 28 preferably comprises very short and closely spaced cuts 57, longer cuts 58 and 59 extend over the coextensive edges of top panel 35

and front panel 37, and the radii are cuts 60, 61. Cuts 58, 59, 60, and 61 are provided to insure clean removal of panel 55 inasmuch as short spaced cuts in such areas could render it more difficult to remove panel 55.

[0022] Returning again to FIG. 3, it was surprisingly found that the carton 21 of the present disclosure provides a more consistent and more erect sheet 22 having a higher degree of angle, θ , relative to top wall 35 relative various prior art designs. It was also surprisingly found that the carton 21 of the present disclosure eliminated any need for additional packaging materials known to those of skill in the art as "pop-up" window film. It would be readily recognized by one of skill in the art that this advantage results in a significant cost advantage over currently marketed cartons. By way of non-limiting example, the carton described herein requires fewer production materials to form a completed carton. Additionally, the carton described herein can be produced in a manufacturing environment with less production steps than are necessary to adhere additional carton materials to the carton board forming the carton 21. Further, the carton 21 of the present disclosure clearly preserves the functionality of a sheet 22 by better maintaining the vertical orientation of the partially dispensed sheet 22 relative to the carton 21. Better yet, the carton 21 of the present disclosure clearly provides a smaller environmental footprint over the known various prior art cartons by reducing the materials disposed in a landfill when the carton 21 is depleted of sheets 22.

[0023] Yet still, the "T"-shape of the opening 24 of the carton 21 of the present disclosure provides increased access to a stack of sheets 22 from side of carton 21 in the unlikely event that the sheet 22 falls back, or is purposefully re-inserted (a so-called "drop-in"). "Drop-ins" are next-successive sheets 22 that fall back inside the carton 21 after completing the dispensing of the next prior sheet 22. Referring to FIG. 5, the portion of the "T"-shaped opening of carton 21 disposed upon the front wall 37 of carton 21 described herein has a width which can be conveniently expressed as the quantity B-2C. Providing this portion of the "T"-shaped opening 24 with this dimension is a significant improvement over known prior art cartons that were found to typically provide consequently narrow openings making it difficult for a user to access the sheet materials from this location. Further still, the "T"-shape of the opening 24 of the carton 21 of the present disclosure provides increased visual access to sheets 22 stacked within carton 21 in order to gauge the fill of the sheets 22 remaining in carton 21.

[0024] It was also surprisingly found that the benefits of the carton 21 described herein can be articulated over known prior art cartons due to the dimensional specifications discussed herein. For example, the length of the head portion 25 of the tear-out panel 55 (i.e., the back edge of dispensing opening 24, FIG. 1), B, was surprisingly found to provide a more consistent and more erect sheet dispensing relative to some prior art designs. For example it was surprisingly found that if the length of the head portion 25, B, was increased in length beyond the range specified herein, consistency of the partially dispensed sheet 22 to obtain and be maintained in a reliable, reproducible, and suitable vertical orientation relative to the carton 21 and opening 24 as discussed supra was significantly reduced.

[0025] The dimensions and values disclosed herein are not to be understood as being strictly limited to the exact numerical values recited. Instead, unless otherwise specified, each

such dimension is intended to mean both the recited value and a functionally equivalent range surrounding that value. For example, a dimension disclosed as "40 mm" is intended to mean "about 40 mm."

[0026] All documents cited in the Detailed Description of the Invention are, in relevant part, incorporated herein by reference; the citation of any document is not to be construed as an admission that it is prior art with respect to the present invention. To the extent that any meaning or definition of a term in this document conflicts with any meaning or definition of the same term in a document incorporated by reference, the meaning or definition assigned to that term in this document shall govern.

[0027] While particular embodiments of the present invention have been illustrated and described, it would be obvious to those skilled in the art that various other changes and modifications can be made without departing from the spirit and scope of the invention. It is therefore intended to cover in the appended claims all such changes and modifications that are within the scope of this invention.

1. A dispensing carton for interfolded sheets which carton comprises integral stationary means for enabling dispensing of said interfolded sheets through a single dispensing opening in a stationary wall portion of said carton and providing substantially droop-free pop-up dispensing of one sheet of said interfolded sheets at a time, said carton being sized to contain a bundle of said interfolded sheets, said carton having top, front, rear, bottom and end walls, said means for dispensing comprising means for defining a "T"-shaped dispensing opening comprising an elongate head portion which is centrally disposed in said top wall of said carton and which has a linear back edge, a stem portion which extends downwardly through a medial portion of said front wall of said carton, and a radiused portion having arcuate edges disposed intermediate said elongate head portion and said stem portion, wherein the width of said elongate head portion ranges from 0.375 inches to about 1.00 inches, and said opening being configured to be sufficiently constrictive with respect to withdrawing single sheets therethrough to enable substantially droop-free pop-up dispensing of one sheet at a time.

2. The dispensing carton of claim 1 wherein said interfolded sheets are facial tissues.

3. The dispensing carton of claim 1 wherein the length of said elongate head portion ranges from about 4.5 inches to about 6.5 inches and a width ranging from 0.375 inches to about 1.00 inches.

4. The dispensing carton of claim 1 wherein said stem portion intersects the juncture between said front wall and said top wall, and extends orthogonally into said top wall therefrom whereby the intersection of said stem portion and said radiused portion is spaced from the juncture of said front wall with said top wall.

5. The dispensing carton of claim 1 wherein said means for defining said dispensing opening is a smoothly contoured cut edge about the entire perimeter of said dispensing opening.

6. The dispensing carton of claim 1 wherein said means for defining said dispensing opening is a smoothly contoured removable panel.

7. The dispensing carton of claim 1 wherein said one sheet forms an angle relative to said top wall of said carton, θ , ranging from about 80° to about 90°.

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