

Feb. 6, 1962

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3,019,944

DISPENSING CARTON FOR FLEXIBLE SHEETS

Filed Dec. 30, 1957

2 Sheets-Sheet 2

Fig. 5

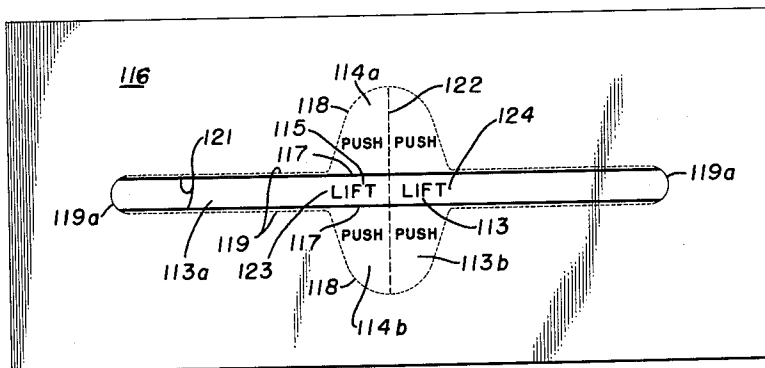


Fig. 6.

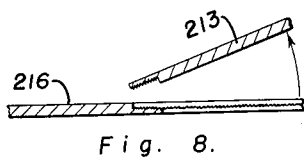
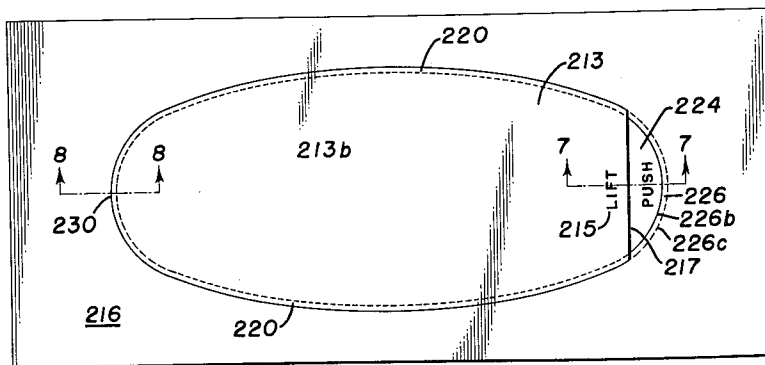


Fig. 8.

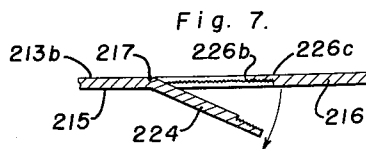


Fig. 7.

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3,019,944

DISPENSING CARTON FOR FLEXIBLE SHEETS
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Corporation, Neenah, Wis., a corporation of Delaware
Filed Dec. 30, 1957, Ser. No. 706,139
2 Claims. (Cl. 221—302)

This invention relates to dispensing boxes or cartons which are formed with displaceable sections to provide dispensing openings.

A principal object of the invention is to provide an improved type of dispensing opening for a carton which has means to facilitate opening of the carton. Another object is to provide a removable section which resists being pushed inwardly but has improved means to facilitate the outward removal thereof.

It is sometimes desirable to provide a narrow dispensing opening which lies entirely within one side of the carton. An example is dispensing cartons for cleansing tissues wherein the tissues are interfolded so that as each tissue is withdrawn the next tissue is partly withdrawn. In this type it is desirable that the dispensing opening be constricted so as to prevent the leading sheet from falling back into the box and restrict the free passage of the succeeding sheet through the opening as the sheets are removed. In addition, the constricted opening serves to hold the leading tissue in a convenient position to be grasped. This may be done by providing a narrow slot in the top side of the carton, the slot not extending the full length of the carton. One object of this invention is to provide an opening section for this type of carton, the opening section having improved means to facilitate its removal. Another object is to provide in such an opening section for this type carton an enlarged portion to facilitate access to the contents of the carton.

Other objects and advantages of this invention will be apparent from the following description and from the appended drawings, wherein:

FIGURE 1 is a perspective view of a dispensing carton for tissues showing a tissue extending through a dispensing opening formed in accordance with our invention;

FIGURE 2 is a cross section taken on line 2—2 of FIG. 1 shown at reduced scale;

FIGURE 3 is an enlarged plan view of the carton of FIG. 1 before removal of the removable section to form the dispensing opening;

FIGURE 4 is an enlarged fragmentary cross section taken on line 4—4 of FIG. 3, the thickness of the carton wall being exaggerated so as better to show the structure;

FIGURES 4a and 4b are similar sections taken on line 4—4 of FIG. 3 illustrating the steps in removing the removable section;

FIGURE 5 is a plan view of another form of our invention;

FIGURE 6 is a plan view of still another form of our invention;

FIGURE 7 is an enlarged fragmentary section taken on line 7—7 of FIG. 6 showing a tab being pushed inwardly prior to removal of the removable section; and

FIGURE 8 is an enlarged fragmentary section taken on line 8—8 of FIG. 6 as the removable section is being removed.

Referring now to the drawings, wherein like characters indicate the same or similar parts, FIGS. 1 to 4b illustrate one embodiment of our invention comprising a dispensing carton 10 of flexible material such as paper-board for dispensing tissues 11, having a dispensing opening 12 which comprises a narrow slot 12a and an enlarged portion 12b at one end thereof. Tissues 11 preferably are interfolded as indicated in FIG. 2, with the top or

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leading tissue 11a extending out of the dispensing opening and held up in convenient position for grasping by the narrowness of slot 12a and the reduced overall length of opening 12 as compared to the length of the carton and the length of the tissues contained therein. Enlarged portion 12b of the dispensing opening gives easy access for two fingers to reach into the carton to withdraw the first tissue, and to withdraw each succeeding tissue if they are not interfolded.

FIGURE 3 shows the top of the carton 10 before it has been opened by removal of our novel removable section, which is generally designated 13 and is formed entirely in the top side or wall 16 of the carton by a frangible or severance line along which the carton material is at least weakened, as by suitable incisions such as illustrated, to define the dispensing opening and the corresponding removable section, and to make it possible to remove the latter to form the former. Section 13 has a narrow elongate strip portion 13a and a comparatively broad enlarged portion 13b forming respectively the slot and enlarged portions of the dispensing opening, which is to be formed. Within or adjacent to the enlarged portion 13b, and within the frangible line, a push-in tab 14 is formed in the top. A gripping portion 15 is included in enlarged portion 13b and is adjacent to tab 14 and connected thereto along a hinge line 17 formed by a line of weakness such as a cut score as illustrated, or alternatively by other conventional means such as a score or a perforation line. Tab 14 is easily pressed inwardly to hinge about line 17 when the severance line or lines of weakened material bounding tab 14 are severed. Thus tab 14 may be pushed in and swung under gripping portion 15, as illustrated in FIG. 4a, and elements 14 and 15 may then together be gripped and lifted as illustrated in FIG. 4b to open the box, first the enlarged portion 13b and then the connected narrow strip portion 13a, all in one continuous motion as the material along the frangible lines is severed. In this manner the dispensing opening 12 illustrated in FIG. 1 is formed, with its enlarged and slot portions 12b and 12a corresponding respectively with enlarged and strip portions 13b and 13a of removable section 13.

The severance line or lines around the removable section may be formed in any suitable manner to maintain the top of the carton intact during storage and handling prior to use and facilitate removal of the removable section when desired. In the preferred form illustrated in FIGS. 3 and 4 the portion 18 of the severance line defining tab 14 and the portions 19 defining the strip 13a are formed by closely spaced perforations entirely through the carton material. The portion of the severance line 19a connecting portions 19 at the end of the strip preferably is a continuous cut line cut entirely through the carton material.

Each of the severance means around the enlarged portion 13b between tab 14 and strip 13a is preferably of a type which resists inward forces but releases easily when an outward force is applied. Two suitable forms of this type are shown respectively in the patents to Eckman, No. 2,608,341 and to Hickin, No. 2,626,096. The preferred form for this means, as shown in FIGS. 3 to 4b, attains the desired result in an improved manner in which all of the cuts and incisions are applied from the same side of the carton material, in this case the top or outer side. Here, as best shown in FIG. 4 there is a narrow border or strip of material 20a between an outer continuous cut score line 20b which extends only part way through the material from the outer surface thereof and an inner line 20c of closely spaced perforations formed entirely through the sheet material, also from the outer surface. It will be noted from FIGS. 4 and 4b that this preferred construction provides in the permanent

part of the top wall 16 a shelf-like portion 20d between lines 20b and 20c, upon which enlarged removable portion 13b bears when pressure is exerted to push tab 14 inwardly. Also main weakness lines 20c and 18 are not connected but rather are discontinuous as to each other thus further strengthening portion 13b against depression inwardly of wall 16. To enhance this strength, lines 20b may also be discontinuous from line 18 if desired. Outer lines 20b may be formed of closely spaced perforations instead of a cut score if desired, but in any event the incision or cuts must extend only part way through the sheet material from the outer side. Departing from the concept of forming all incisions from the top, the inner line 20c may be formed by a continuous cut score line provided it extends only part way through the sheet material from the inner surface. In any event the inner cut line leaves unsevered connecting material along the outer surface of the sheet material between the enlarged portion 13b and the narrow border strip 20a. In other words, to provide a frangible line of the general type which resists inward forces but severs easily when an outward force is applied, outer cut line 20b comprises at least closely spaced cuts but said cut line extends only part way through the sheet material from the outer surface thereof, and the inner cut line comprises at least closely spaced cuts, said inner cut line extending at least part way through the sheet material from the inner surface thereof but leaving unsevered connecting material adjacent the outer surface and joining lift-out portion 13b with the upper or outer portion of the material of the narrow border 20a.

Although not essential it is desirable to stiffen removable section 13 with longitudinal stiffening lines of embossing 21 across enlarged portion 13b. These may extend a substantial distance along strip 13a, and, as shown in FIG. 3, they preferably comprise a pair of parallel lines of embossing close to the respective severance lines 19 and extending the full length of the strip.

The embodiment shown in FIG. 5 provides a removable section for conveniently forming a dispensing opening comprising a long narrow slot with an enlarged portion intermediate and preferably equidistant from the ends of the slot. The removable section, as in the case of the first embodiment, lies wholly within the top side 116 of the carton, and it is enclosed and defined by severance lines 118, 119, 119a which may be of any suitable kind, here shown as closely spaced cuts along portions 118 and 119 and as a continuous cut around each slot end portion 119a. A transverse severance line 122 formed by a line of perforations divides enlarged portion 113b and in fact the entire removable section 113 into symmetrical subsections 123 and 124, only one of which need be described. A pair of parallel lines of embossing 121 preferably extend the full length of the removable section, and at least extends across the enlarged portion 113b in substantially the manner shown in FIG. 5. In this enlarged portion the lines of embossing form a pair of hinge lines 117 of material which is weakened so far as bending the material about them as hinges is concerned. At the same time they stiffen the material longitudinally. Hinge lines 117 and severance lines 118 and 122 define, for each subsection, a pair of tabs 114a and 114b, one on each side of a gripping or lift portion 115 between hinge lines 117.

To form the dispensing opening it is only necessary to remove each subsection by pressing down on its tabs 114a and 114b with the thumb and forefinger to rupture the severance lines 118 and 122 and then bring the thumb and forefinger together to grip the tabs under portion 115, then lift the section from the box.

Our invention is not limited to liftable or removable sections of the specific forms described above, provided that the liftable portion of the section is formed by severance lines of any of the types described above for severance lines 20b and 20c of FIGS. 3 and 4, i.e. in which the portion of the severance lines immediately following

the tab such as 14 offers little resistance to outward or lifting forces applied to the liftable section but offers substantial resistance to inward forces applied thereto; and further it is preferred that, connected to the liftable section by a weakened hinge line there is a tab which may be pressed in easily to get it under the liftable section to lift it. For example, as shown in the embodiment of FIG. 6, a removable section 213 of generally elliptical shape may be provided. In this embodiment the removable section is enclosed by a severance line 220 around liftable portion 213b and a severance line 226 around tab portion 224, portions 213b and 224 being hingedly connected, as by a cut score line 217 extending part way through the material of top side or wall 216. Severance line 220 preferably is of the form shown in FIGS. 3 and 4, but may be of any of the other described forms which offers substantial resistance to inward forces but little resistance to outward or lifting forces. Severance line 226 preferably is of a type similar to that of severance line 220 except that it is easily severed by an inward force, e.g., it may be formed as shown here by an outer line of closely spaced perforations 226c extending clear through the material of top side 216 and an inner continuous cut line 226b extending only part way through the material from the outer or top side. If desired, any other suitable severance line which permits tab 224 to be pushed in easily around hinge line 217 may be used in place of that shown for severance line 226.

To remove removable section 213 it is only necessary to push tab 224 in as illustrated in FIG. 7 and under the adjacent gripping or lift portion 215, whereupon section 213 may be removed easily as indicated in FIG. 8.

If desired to retain section 213 hinged to top 216 for reclosing purposes a part of the severance line may be omitted opposite tab 224 in the region indicated at 230.

It will be seen that we have provided useful improvements for forming dispensing openings in cartons. Numerous variations within the scope of the appended claims will be apparent to those skilled in the art.

We claim:

1. In a dispensing carton of fibrous material, a manually removable elongate generally key-shaped panel disposed in a co-planar portion thereof marginally defined by a perimeter of weakness, said panel comprising a strip-like portion leading into a major lift portion of greater transverse width than the strip portion, and a connected push-in tab portion of lesser transverse width than said major lift portion disposed at one end and aligned with said strip-like portion, said tab portion being marginally defined by perforations and hingedly connected to said lift portion by a line of weakness, said major lift portion being marginally defined by a cut score line extending from the exterior surface partially through the fibrous material of said carton, and a line of perforation spaced inwardly of said cut score line and extending substantially coextensive therewith but terminating short of said tab hinge line, said strip-like portion being marginally defined by lines of perforation extending continuously from the marginal perforations of said lift portion and terminating in a cut score line at the free end of said strip portion, whereby said panel is severable from said carton by manual depression and hinging of said push-in tab to the bottom surface of said lift portion followed by upward lifting of the latter portion, and resultant severance of the fibrous carton material within the area bounded by the said cut score lines and inwardly spaced perforations, with further lifting thereof resulting in complete severance of the remaining strip-like portion of said panel.

2. The dispensing carton of claim 1 including a pair of parallel spaced longitudinal stiffening lines of embossing extending marginally adjacent said perforations throughout said strip-like portion and through said major lift portion to said embossed transverse line of weakness.

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