Feb. 5, 1963 W. W. PETRYK ET AL 3,076,590

CARTON

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FIG. 1

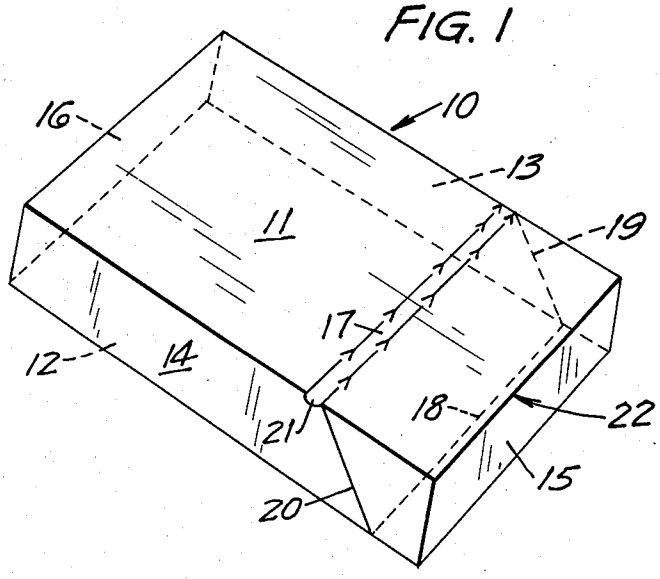


FIG. 2

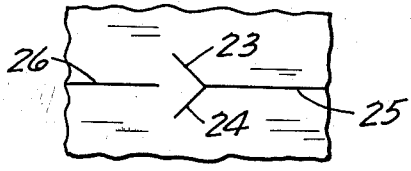
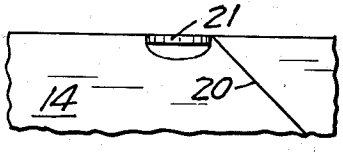


FIG. 3



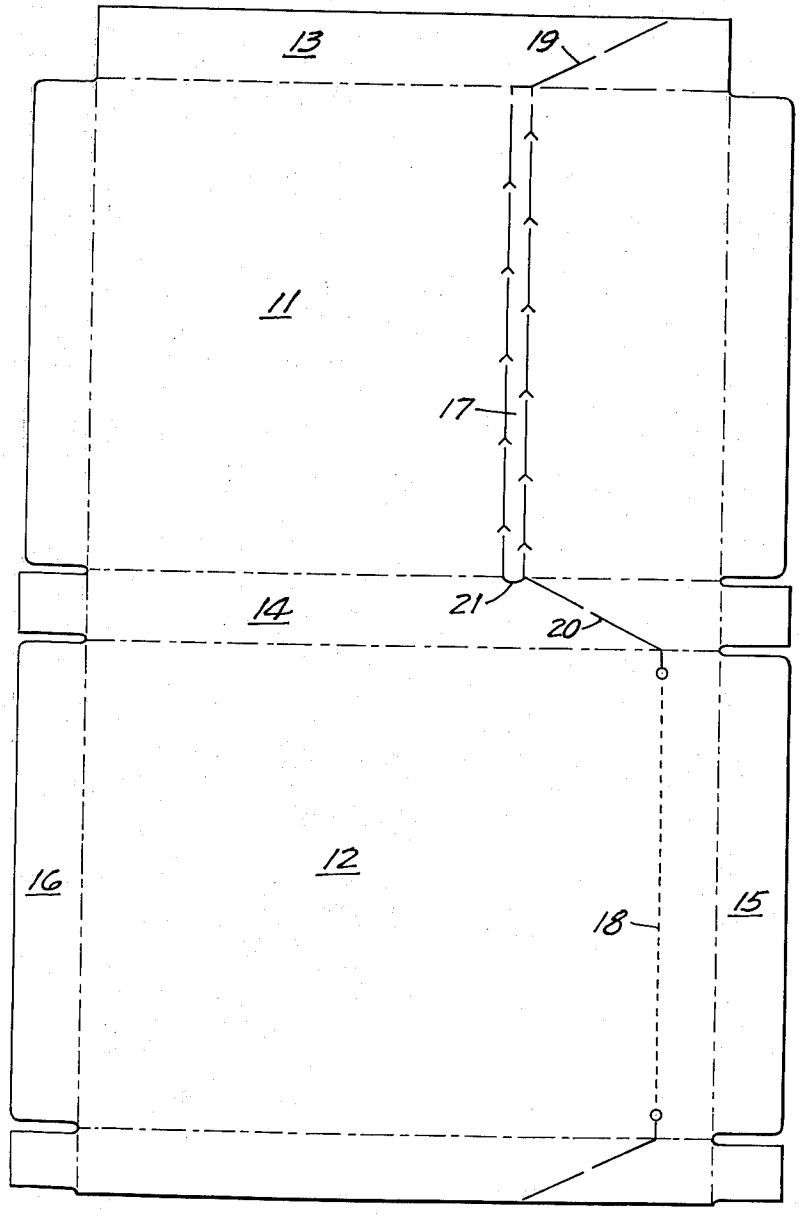
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FIG. 4



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CARTON

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1 Claim. (Cl. 229—51)

This invention relates to easily openable cartons, envelopes or the like having an integrally formed removable tear strip. In a specific illustrative embodiment, the invention is directed to a box or carton of rectangular cross-section having a removable end portion and suitable for the storing and dispensing of cut sheets of sensitized paper.

Integral tear strips have commonly been formed in cardboard boxes or cartons by providing a series of linear cuts along two closely spaced parallel lines defining the sides of the tear strip. The short uncut sections remaining between the ends of the cuts are sufficient to retain the strip in place during all normal handling, but are easily torn progressively along the strip as the same is removed by a lifting and tearing motion beginning at a starting end thereof. The structure is adequate with thin and well-unified paper or board as used in many boxes or envelopes.

With thicker or softer paper or board, and more particularly with board of laminar structure, the simple line cuts of the prior art are found to yield a tear strip area which, under the stresses of removal, frequently splits or delaminates, thus providing a source of annoyance and difficulty in the removal of the tear strip.

The present invention provides an integral removable tear strip which, while useful with a wide variety of papers or boards, is particularly advantageous when used with laminar board constructions, providing a tear strip which is completely free of delamination and similar difficulties on removing from the carton.

In the drawing:

FIGURE 1 is a view in perspective of a carton provided with an integral removable tear strip in accordance with the invention;

FIGURE 2 is a detail view showing a typical series of cuts defining the tear strip;

FIGURE 3 is a partial side elevation of the carton of FIGURE 1 showing the starting end portion of the tear strip together with adjoining segments of the side section of the carton; and

FIGURE 4 is a plan view of the carton blank.

The carton **10** of FIGURE 1 has a rectangular cross-section and comprises upper and lower face sections **11** and **12**, side sections **13** and **14** and end sections **15** and **16**. A tear strip **17** is integrally formed in the upper face section **11**, being defined by two parallel lines of cuts extending across the width of said section. A fold line **18** similarly extends across the lower face section **12** parallel to the tear strip **17**, and the ends of the fold line and the tear strip are connected by cuts **19** and **20** in the side sections **13** and **14** respectively. One end **21** of the tear strip desirably extends slightly from the corresponding edge of the carton and provides a leading end for grasping the tear strip in removing it from the carton.

Removal of the tear strip, by upwardly pulling at the

end **21**, is accomplished without splitting or delaminating of the laminar board forming the carton. Removal of the strip will be seen to loosen the end portion **22** of the carton, permitting it to be swung around the fold line **18** to a position below the remainder of the carton, thus exposing the contents thereof and permitting easy removal of said contents. In the case of sheets of paper or the like, the sheets are easily removable one at a time from the opening thus provided, and the end portion, in its position beneath the open end of the carton, raises that end from the supporting bench or shelf to a more accessible position, while preventing accidental spilling of the contents.

The cuts outlining the tear strip **17** of FIGURE 1 will be seen to be each in the form of a Y having an extended stem, the stems being arranged along the two parallel lines defining the strip. The open top of each Y faces toward the leading end **21** of the strip and therefore toward the trailing end of the preceding cut.

A preferred arrangement of cuts is illustrated in FIGURE 2. The cuts **23** and **24** forming the open top of the Y form equal angles with the extended stem **25** and approximately a right angle with each other; and the distance from the trailing end of the preceding extended stem **26** to the juncture of said cuts **23** and **24** is approximately equal to the length of the latter. In a specific carton as described, designed for the dispensing of 8½" x 11" sheets of sensitized paper, the length of the cuts **23** and **24** was approximately ⅛", and the length of the extended stem **25** was approximately 1¼". The distance between the two parallel lines defining the tear strip was in this instance about ⅜". The board used was a 24 point cylinder boxboard made from natural jute fiber.

Again referring to FIGURE 1, it will be noted that the open top of each Y-shaped cut at one side of the tear strip is displaced from a position opposite the corresponding open tops of the Y-shaped cuts of the opposing parallel line of cuts, except, in this instance, for the last such cut in each of said parallel lines.

FIGURE 3 illustrates a segment of the side section **14** and the extended end **21** of the tear strip **17**, showing the said end as obtained from the section **14**, and the cut **20** as connected with an end cut of the tear strip. The opposite end of the tear strip may similarly be provided with a cut connecting the cuts defining the side lines, so that the strip may be completely severed from the carton; but this is not essential, as the cut **19** may connect either to such cross cut or to an edge cut of the tear strip.

What is claimed is as follows:

In a rectangular cross-section dispensing carton for sheet material having an openable end portion, means for opening said carton comprising: an integral removable tear strip extending across one face section of said carton at an edge of said openable end portion and defined by two parallel lines of cuts in said face section, each of said lines comprising a series of cuts each in the shape of a Y having an extended stem, the stems of each line being parallel to the other of said lines, the open top of each Y facing the trailing end of the preceding cut and being displaced from a position opposite a corresponding portion of said other line, there being a further cut transversely of said parallel lines at least across the leading end of said tear strip; and a fold line extending across the face section of said carton opposite said

one face section and parallel to said parallel lines; the side edge sections of said carton being each cut along a line connecting an end of said fold line with an end cut of said tear strip.

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