March 3, 1964 A. R. MENZIES 3,123,277

CARTONS

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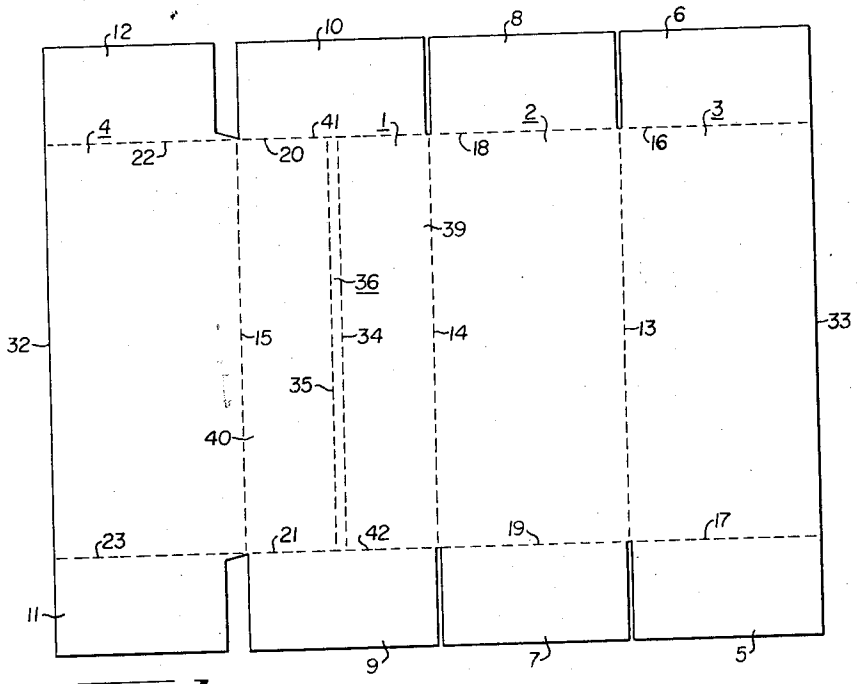


Fig. 1

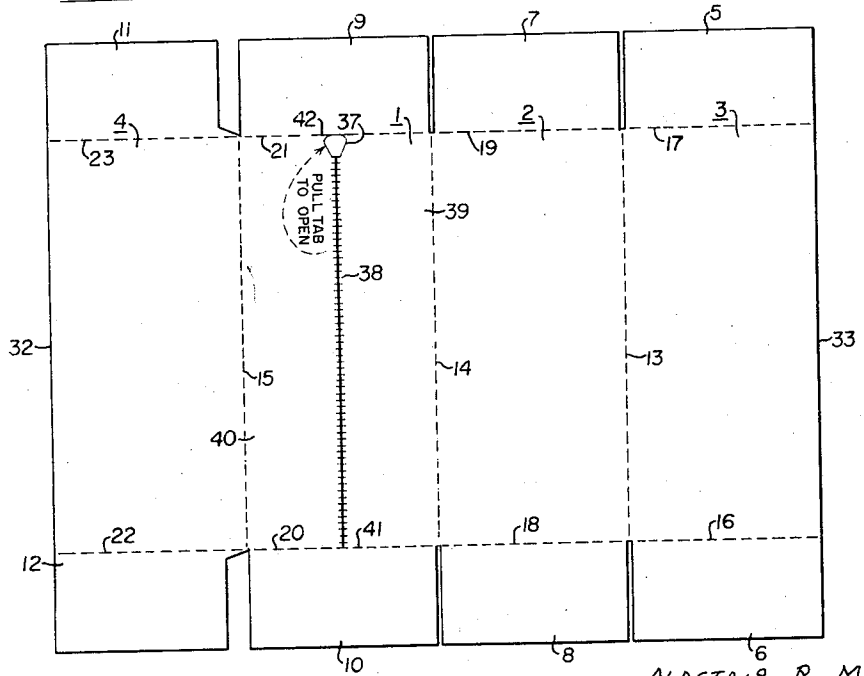


Fig. 2

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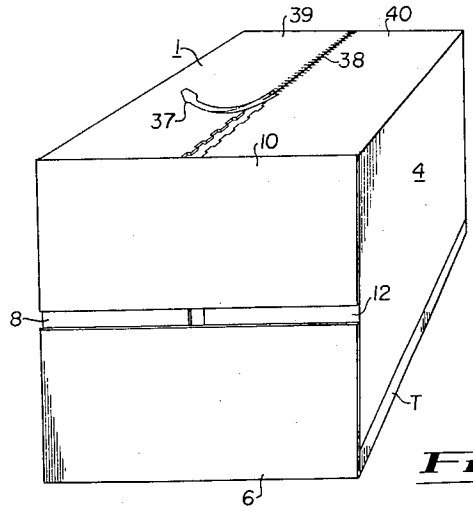


Fig. 3

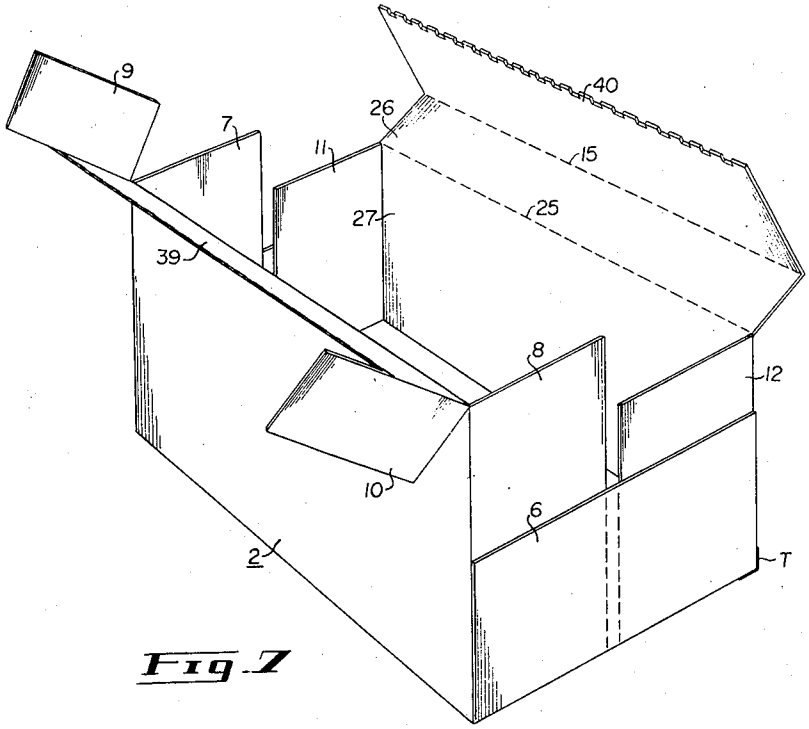


Fig. 7

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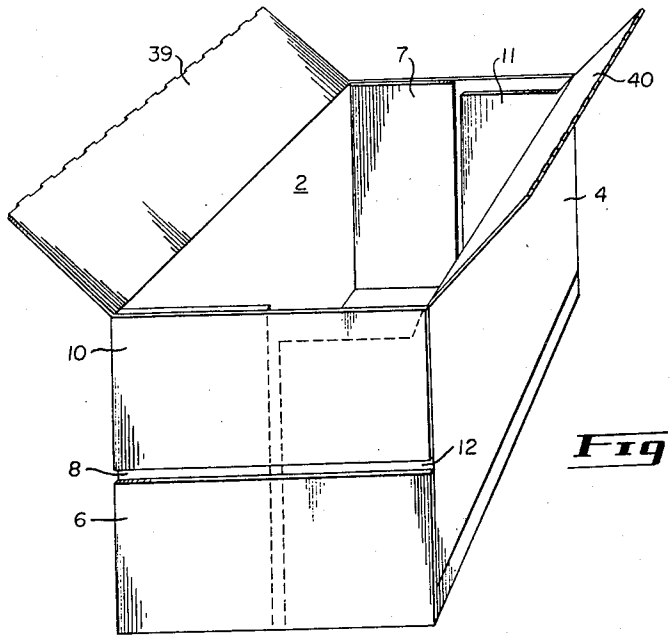


Fig. 4

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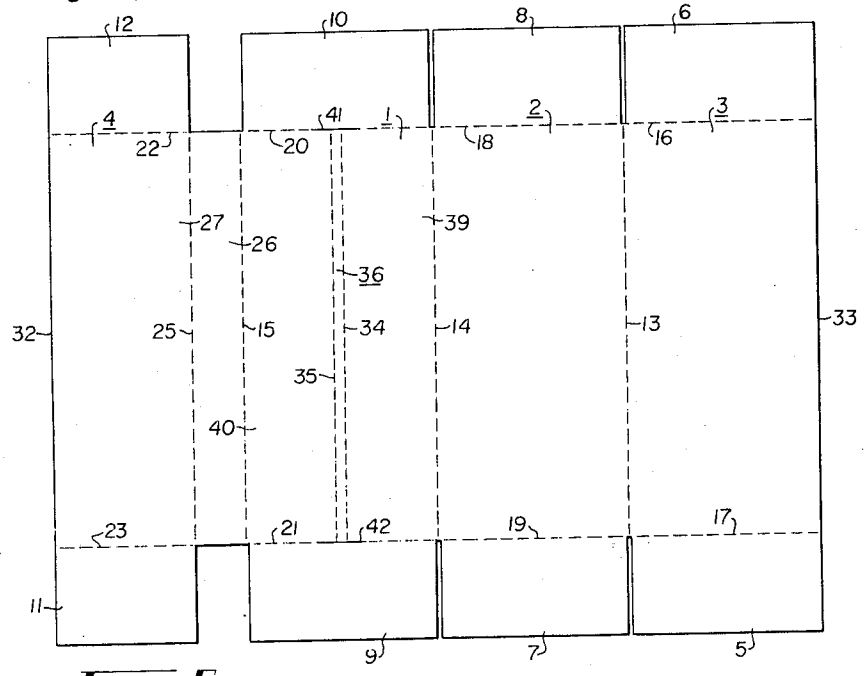


Fig. 5

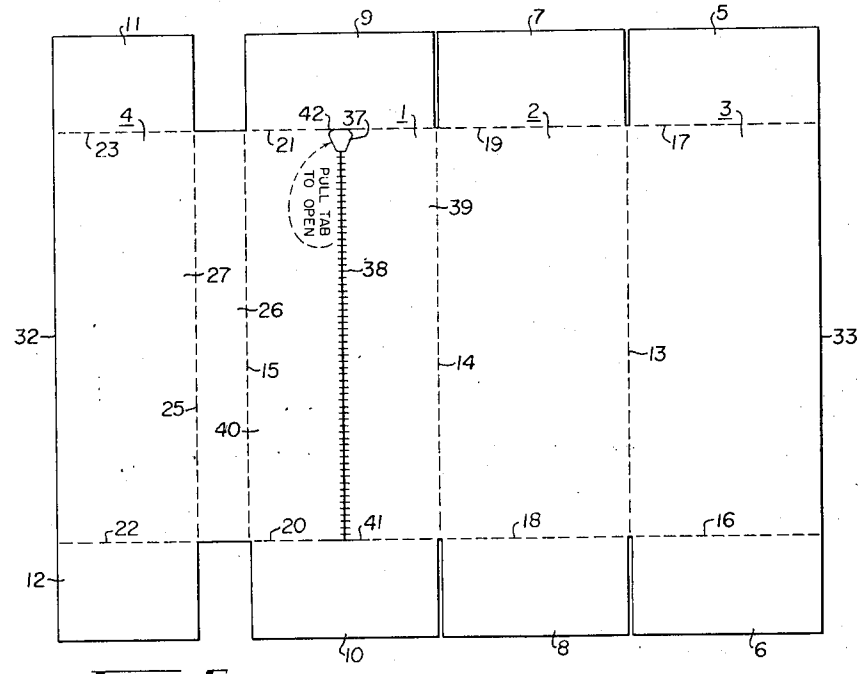


Fig. 6

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United States Patent Office 3,123,277 Patented Mar. 3, 1964

3,123,277

CARTONS

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1 Claim. (Cl. 229—51)

This invention relates to pre-formed cartons and more particularly to an improved carton of the type formed from a single blank of resilient material having portions adapted to be folded so as to provide a bottom, top, side and end walls.

The object of this invention is to provide novel means for opening the pre-formed carton which when combined with novel structural changes in the carton wall facilitates the removal of smaller boxes or articles within the carton.

The invention is illustrated, by way of example, in the accompanying drawings, in which:

FIGURE 1 is plan view of a one-piece blank, showing the underside of the blank, from which a first type of carton is ultimately formed;

FIGURE 2 is a plan view of the blank of FIGURE 1 showing the upper side of the blank from which the first type of carton is ultimately formed;

FIGURE 3 shows a perspective view of the erected first type of carton;

FIGURE 4 is a similar view showing the condition of the first type of erected carton when opened;

FIGURE 5 is a plan view of a one-piece blank, showing the underside of the blank, from which a second type of carton is ultimately formed;

FIGURE 6 is a plan view of the blank of FIGURE 5 showing the upper side of the blank from which the second type of carton is ultimately formed; and

FIGURE 7 is a view, similar to FIGURE 4, but showing the condition of the second type of erected carton when opened.

Referring to the drawings, and in particular to FIGURES 1 and 2, the form of one-piece blank shown therein is provided with a plurality of panels 1 to 4, hingeably and integrally connected together along first common score lines 13 to 15 The plurality of panels comprises a main panel 1 which ultimately serves as a top, secondary panels 2 and 4 which ultimately serve as side walls and tertiary panel 3 which ultimately serves as a bottom.

End flaps 5—12 are hingeably and integrally connected to the ends of panels 1 to 4 along second common score lines 16 to 23 and ultimately serve as inner and outer end walls of the carton. In particular, end flaps 5 and 6 are hingeably and integrally connected at opposite ends of tertiary panel 3 along second common score lines 17 and 16 respectively. End flaps 7 and 8 are hingeably and integrally connected at opposite ends of secondary panel 2 along second common score lines 19 and 18 respectively. End flaps 9 and 10 are hingeably and integrally connected at opposite ends of main panel 1 along third common score lines 21 and 20 respectively and end flaps 11 and 12 are hingeably and integrally connected at opposite ends of secondary panel 4 along second common score lines 23 and 22 respectively.

Main panel 1 includes a double row of continuous slits 34 and 35 on one face, said face being adapted to form the inner face of the top of the carton when erected, which defines a tear strip 36 extending substantially from end to end of the said main panel 1. If desired the opposite face of the panel 1 overlying the tear strip 36 may be marked with a cross-hatched line 38 to give the effect of a zipper, see FIGURE 2. An enlarged portion at one end of the tear strip forms a pull-tap 37 (FIGURE 2)

to act as a lifter for tearing said tear strip 36 from said main panel 1. Said tear strip 36 also divides said main panel 1 into two sub-panels 39 and 40.

Said third common score lines 20 and 21, which connect end flaps 10 and 9 respectively to said main panel 1, contains slits 41 and 42 therein respectively which are adjacent to and perpendicular to the ends of the tear strip 36.

A carton is formed from the first one-piece blank shown in FIGURES 1 and 2, by bending secondary panel 2 which forms one of the side walls at right angles to tertiary panel 3 which forms the bottom along the first common score line 13. Main panel 1 which forms the top, is then bent at right angles to the secondary panel 2 along the first common score line 14. Now secondary panel 4 which forms the second side wall is bent at right angles to main panel 1 along the first common score line 15 so that the free marginal side edge 32 of secondary panel 4 abuts the free marginal side edge 33 of tertiary panel 3. These free marginal side edges are then preferably secured together by a strip of liquid-proof adhesive tape T shown in FIGURES 3 and 4. End flaps 7 and 8 are bent at right angles to side wall 2 along second common score lines 19 and 18 respectively and end flaps 11 and 12 are bent at right angles to side wall 4 along second common score lines 23 and 22 respectively so that end flaps 7 and 11 form one inner end wall and end flaps 8 and 12 form the opposite inner end wall. Bottom end flaps 5 and 6 are then bent at right angles to the bottom 3 along second common score lines 17 and 16 respectively and top end flaps 9 and 10 are bent at right angles to the top 1 along third common score lines 21 and 20 so that flaps 5 and 9 form one outer end wall and flaps 6 and 10 form the opposite outer end wall.

The inner and outer end walls are secured in face-to-face contact with one another in any convenient manner, preferably by the application of any suitable adhesive.

The erected and filled carton may be opened by lifting the pull-tab 37, shown in FIGURE 3, and pulling it towards the opposite end of the panel 1 whereby the tear strip 36 is removed thus tearing top 1 into two sub-portions 39 and 40. Sub-portions 39, 40 can then be grasped by the hands and torn back along the third common score lines 20 and 21, and respectively folded back along the score lines 14, 15. This operation is facilitated by the slits 41 and 42 and the condition of the opened carton is shown in FIGURE 4. The folding back of the sub-portions 39, 40 facilitate removal of the smaller boxes or articles within the carton.

It will thus be appreciated that access to the contents of the carton can be more readily obtained than in hitherto known cartons, especially those containing smaller boxes such as cereals, detergents and the like.

Referring now to FIGURES 5 and 6, the form of one-piece blank shown therein is provided with a plurality of panels 1 to 4, hingeably and integrally connected together along first common score lines 13 to 15. The plurality of panels comprises a main panel 1 which ultimately serves as a top, secondary panels 2 and 4 which ultimately serve as side walls and tertiary panel 3 which ultimately serves as a bottom.

End flaps 5—12 are hingeably and integrally connected to the ends of panels 1 to 4 along second common score lines 16 to 23 and ultimately serve as inner and outer end walls of the carton. In particular, end flaps 5 and 6 are hingeably and integrally connected at opposite ends of tertiary panel 3 along second common score lines 17 and 16 respectively. End flaps 7 and 8 are hingeably and integrally connected at opposite ends of secondary panel 2 along second common score lines 19 and 18 respectively. End flaps 9 and 10 are hingeably and integrally connected at opposite ends of main panel 1 along

third common score lines 21 and 20 respectively and end flaps 11 and 12 are hingeably and integrally connected at opposite ends of secondary panel 4 along second common score lines 23 and 22 respectively.

Secondary panel 4 includes a fourth score line 25 on one face extending from end to end thereof, said fourth score line 25 dividing the said panel 4 ino two sub-panels 26 and 27, as shown in FIGURE 5. The end flaps 11 and 11 associated with secondary panel 4 are the same width as sub-panel 27.

Main panel 1 includes a double row of continuous slits 34 and 35 on one face, said face being adapted to form the inner face of the top of the carton when erected, which defines a tear strip 36 extending substantially from end to end of the said main panel 1. If desired the opposite face of the panel 1 overlying the tear strip 36 may be marked with a cross-hatched line 38 to give the effect of a zipper, see FIGURE 6. An enlarged portion at one end of tear strip forms a pull-tab 37 (FIGURE 6) to act as a lifter for tearing said tear strip 36 from said main panel 1. Said tear strip 36 also divides said main panel 1 into two sub-panels 39 and 40.

Said third common score lines 20 and 21, which connect end flaps 10 and 9 respectively to said main panel 1, contains slits 41 and 42 therein respectively which are adjacent to and perpendicular to the ends of the tear strip 36.

A carton is formed from the second one-piece blank shown in FIGURES 5 and 6, by bending secondary panel 2 which forms one of the side walls at right angles to tertiary panel 3 which forms the bottom along the first common score line 13. Main panel 1 which forms the top, is then bent at right angles to the secondary panel 2 along the first common score line 14. Now secondary panel 4 which forms the second side wall is bent at right angles to main panel 1 along the first common score line 15 so that the free marginal side edge 32 of secondary panel 4 abuts the free marginal side edge 33 of tertiary panel 3. These free marginal side edges are then preferably secured together by a strip of liquid-proof adhesive tape T such as that shown in FIGURES 3 and 4. End flaps 7 and 8 are bent at right angles to side wall 2 along second common score lines 19 and 18 respectively and end flaps 11 and 12 are bent at right angles to side wall 4 along second common score lines 23 and 22 respectively so that end flaps 7 and 11 form one inner end wall and end flaps 8 and 12 form the opposite inner end wall. Bottom end flaps 5 and 6 are then bent at right angles to the bottom 3 along second common score lines 17 and 16 respectively and top end flaps 9 and 10 are bent at right angles to the top 1 along third common score lines 21 and 20 so that flaps 5 and 9 form one outer end wall and flaps 6 and 10 form the opposite outer end wall.

The inner and outer end walls are secured in face-to-face contact with one another in any convenient manner, preferably the application of any suitable adhesive.

The erected and filled carton may be opened by lifting the pull-tab 37, shown in FIGURE 3, and pulling it towards the opposite end of the panel 1 whereby the tear strip 36 is removed thus tearing top 1 into two sub-portions 39 and 40. Sub-portions 39, 40 can then be grasped by the hands and torn back along the third common score lines 20 and 21, and respectively folded back along the score lines 14, 15. This operation is facilitated by the slits 41 and 42. Now, as will be seen from FIGURE 7, the folding back of sub-portion 40 will also cause sub-portion 26 to hinge along the fourth score line 25 in order further to facilitate removal of the smaller boxes or articles within the carton.

I claim:

A pre-formed carton constituted by a plurality of panels articulated together along first common score lines, said plurality of panels comprising a main panel, a pair of secondary panels, and a tertiary panel respectively forming a top, a pair of side walls and a bottom; end flaps each articulated to an associated end of each of said secondary and tertiary panels along a second common score line; end flaps each articulated to an associated end of each of said secondary and tertiary panels along a second common score line; end flaps each articulated to an associated end of said main panel along a third common score line coextensive with said second common score lines, all of said flap forming inner and outer end walls; said top having a double row of continuous slits on the inner face thereof extending normal to said third common score lines and from end to end of said top and defining opposed sides of a tear-strip, said double row of continuous slits terminating, at each end thereof, in slits formed in, and coextensive with, said third common score lines; one end of said tear-strip terminating in an enlarged portion adapted to form a pull-tab for tearing said tear-strip from said top, all portions of said tear-strip being located within the confines of said top and being bounded thereby; and a fourth score line, on the inner face of a selected one of said side walls, extending from end to end of the latter so as to divide said selected wall into first and second portions, the width of the end flaps of said selected side wall corresponding to the width of said first portion; whereby, when said pull-tab has been torn from said top, the remaining portions of said top are capable of being grasped and torn, through the intermediary of said slits in said third common score lines, along said third common score lines away from the end flaps and articulated about the first common score lines forming the marginal side edges of said top to gain unobstructed access to the interior, and hence to the contents, of the carton, and said second portion of said selected side wall is capable of articulation along said fourth score line to gain further unobstructed access to said interior of the carton.

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