

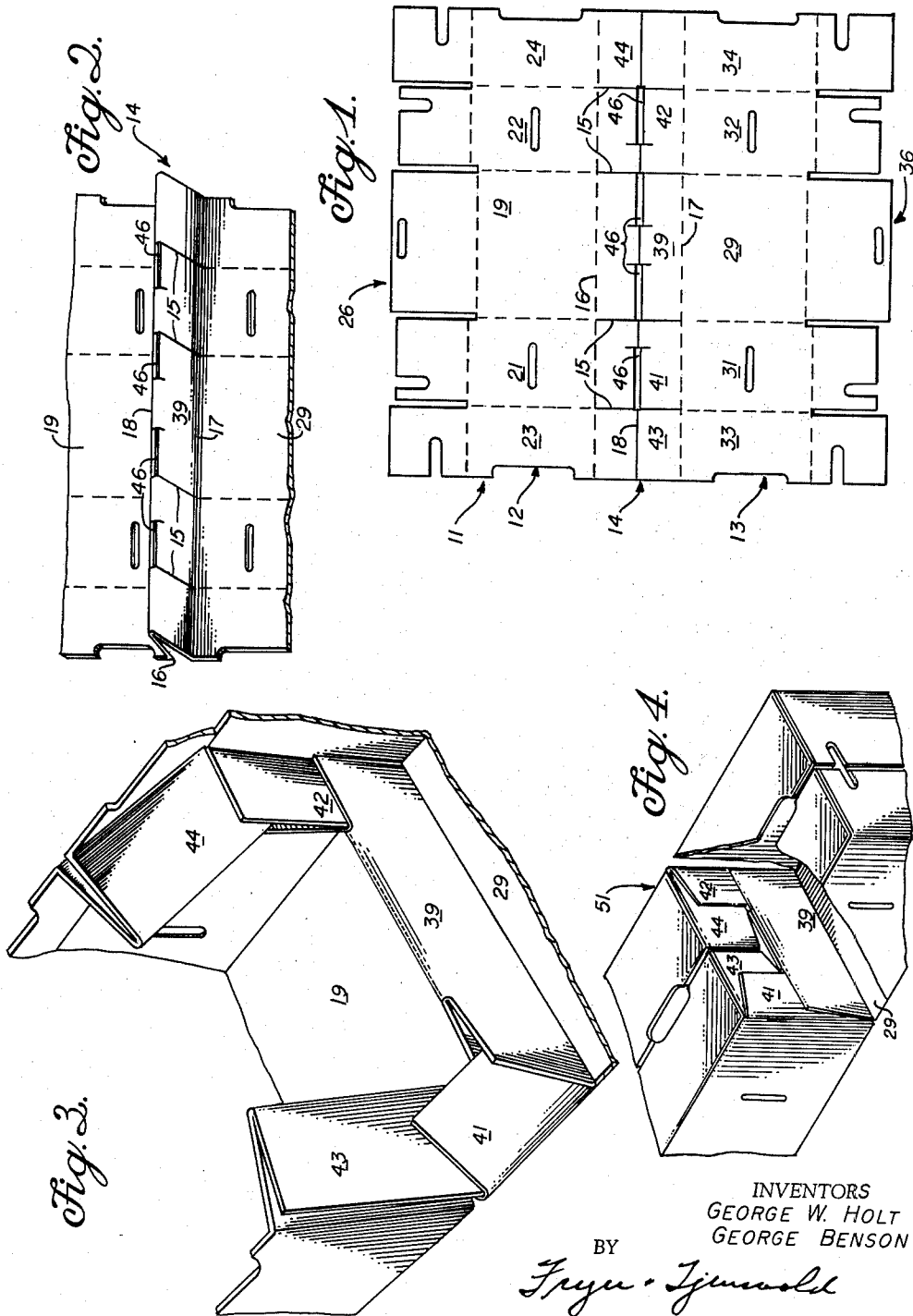
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DIVIDED CARTON STRUCTURE

3,144,190

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2 Sheets-Sheet 1



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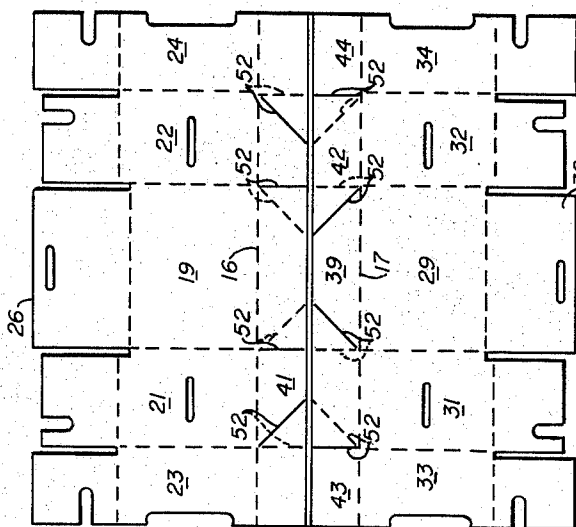


Fig. 5.

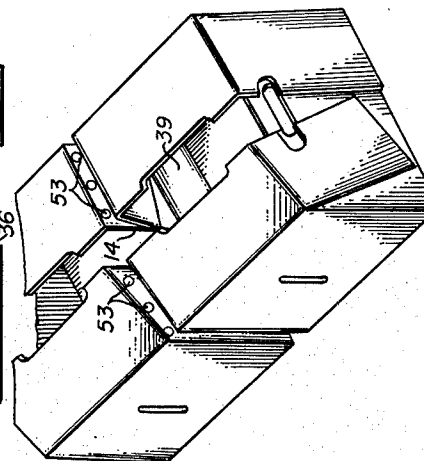


Fig. 8.

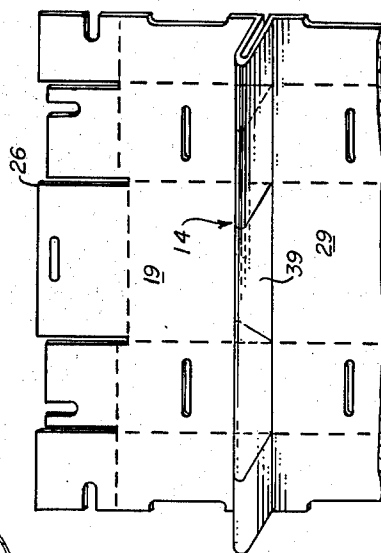


Fig. 6.

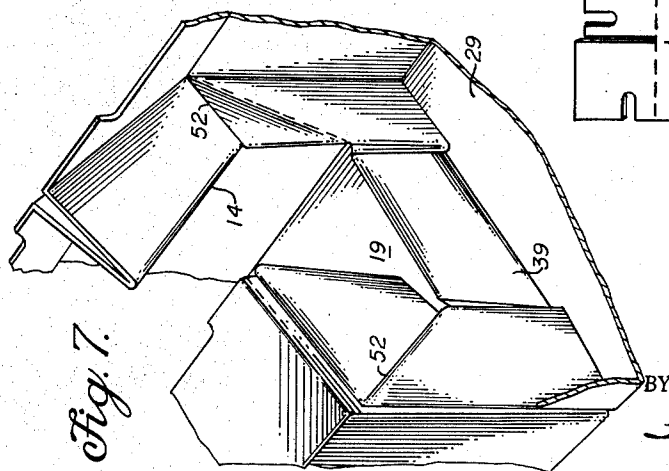


Fig. 7.

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DIVIDED CARTON STRUCTURE

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The present invention relates to paperboard cartons and more particularly to paperboard cartons in which the interior is divided into at least two separate compartments.

It is highly desirable when shipping certain types of items, e.g. bananas, to ship them in cartons which are interiorly divided into compartments which are smaller than the space defined by the outer walls of the carton. The customary manner for providing such a carton includes the use of a divider member which is separate from the carton forming structure and is locked into the interior of the carton structure in one of several ways. This type of divided carton has a number of disadvantages which makes their use undesirable under many conditions. Unless elaborate means are provided for locking the divider into the interior of the carton, it is difficult to prevent the divider from "crawling" and thus not dividing the interior of the carton as desired. A separate divider also has the disadvantage of requiring that reasonably accurate count be maintained of all cartons and dividers so that an equal number of each is always on hand.

The present invention provides a carton which is formed from a single piece of paperboard which is cut and scored in such a manner as to provide a divided carton, when erected, wherein the dividing member is an integral portion of the carton forming portions of the structure and thus cannot "crawl." By providing a carton having an integral dividing member, the present invention also enjoys the advantage of a carton which has superior stacking strength, a structure which automatically eliminates bottom sag, a carton which is easily constructed and insured of having a divider associated therewith. The present invention enjoys a further advantage in that it enables divided cartons to be manufactured at a cost which is less than separate cartons and divider members.

Accordingly, it is an object of the present invention to provide a paperboard carton blank having carton forming portions and divider forming portions which are integral and which can be erected into a carton having a divided interior.

It is a further object of the present invention to provide a carton, the interior of which is divided into at least two separate compartments by dividing structure which is integral with the carton forming structure and which adds stacking strength to the structure and eliminates bottom sag.

It is a further object of the present invention to provide a carton structure having an interior which is divided into at least two separate compartments wherein the compartments can be easily parted from one another so as to provide two separate containing structures.

Further and more specific objects and advantages of the invention are made apparent in the following specification wherein a preferred form of the invention is described by reference to the accompanying drawings.

In the drawings:

FIG. 1 is a plan view of a paperboard carton blank which is cut and scored in a manner which gives rise to the unique structure of the present invention;

FIG. 2 is a partial view of the paperboard blank of FIG. 1 wherein the center divider forming structure is illustrated in its upright position;

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FIG. 3 is an isometric illustration showing the center divider forming structure of the invention partially erected;

FIG. 4 is an isometric view of a carton having the center divider structure of the present invention wherein portions of the carton are broken away to more clearly show the invention;

FIG. 5 is a plan view of a carton blank cut and scored to give rise to the structure of the present invention and illustrates an alternate embodiment from the structure shown in FIG. 1;

FIG. 6 shows a portion of the blank of FIG. 5 wherein the center divider forming structure is shown in its erected position;

FIG. 7 shows the structure of FIG. 6 with the carton partially erected; and

FIG. 8 is an isometric illustration showing a carton having the center divider structure of FIG. 7.

Referring now to FIG. 1, a carton blank 11 has a first carton forming portion 12, a second carton forming portion 13 and an intermediate divider forming structure 14. Intermediate divider forming portion 14 is connected to carton forming portion 12 along a score line 16 while carton forming portion 13 is connected to the portion 14 along a score line 17 wherein score lines 16 and 17 are generally parallel to one another and define one pair of edges of the intermediate portion 14. A score line 18 generally parallel to score lines 16 and 17 divides the intermediate portion into two sections making it possible for score line 16 to be easily brought into close proximity with score line 17 as illustrated in FIG. 2.

The first carton forming portion 12 includes a bottom wall 19, side walls 21 and 22, connected along opposing edges of bottom wall 19, and top walls 23 and 24 which are connected to side walls 21 and 22, respectively. To each of the aforementioned walls of the first carton forming portion 12 is connected end forming structure generally indicated at 26. The second carton forming portion 13 includes a bottom wall 29, a pair of side walls 31 and 32 connected along opposing edges of bottom wall 29, and top walls 33 and 34 which are connected to side walls 31 and 32, respectively. The walls of carton forming portion 13 also have end forming structure which is generally indicated at 36. The carton forming portions illustrated are, for the most part, conventional in the art such that the major contribution of the present invention resides in the intermediate portion 14 from which the divider forming portion is constructed.

The divider forming portion 14 includes a first section 39 to which bottom walls 19 and 29 are connected along opposing edges. Portion 14 has a second section 41 to which side walls 21 and 31 are connected, a third section 42 to which side walls 22 and 32 are connected, a fourth section 43 to which top walls 23 and 33 are connected, and a fifth section 44 to which top walls 24 and 34 are connected. Each of the aforementioned sections of the divider forming structure is separated from its adjacent section by a cut 15 which is generally perpendicular to score line 18 and extends between score lines 16 and 17. The intermediate portion 14 further includes cuts 46 along the score line 18 in sections 39, 41 and 42.

The first step in erecting the carton so as to provide it with a divider section (regardless of the particular type of carton forming structure employed with the intermediate portion 14) is to raise the intermediate portion 14 by bringing score lines 16 and 17 into close proximity or contact. Since the side walls will have to be positioned generally perpendicular to the bottom walls and the top walls generally perpendicular to the side walls, it is necessary to provide means by which the sections of the divider forming portion 14 can be positioned perpendicular to adjacent sections. One means

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enabling the sections to be so positioned includes cuts 46 so positioned along score line 18 as to enable adjacent sections to be interlocked as shown in FIG. 3. Thus, by inserting sections 42 and 41 into the cuts of section 39 and further inserting section 44 into the cut of section 42 and section 43 into the cut of section 41 the sides and top walls of the carton can be properly positioned and at the same time the divider section is automatically formed as shown in FIG. 4. The cuts 15 make it possible for adjacent intermediate sections to be inserted into the cuts 46 and thereby form the interlocking arrangement illustrated in FIG. 4.

The divider structure formed by sections 39, 41, 42 and 44 interlock in a manner which effectively separates the interior of the carton 51 formed from blank 11 into two compartments. Being formed from integral portions of the blank 11 the divider is precluded from shifting its position and the size of each compartment formed is thus permanently maintained. The divider structure further increases the ability of the erected carton to withstand compressional forces thereby giving it greater stacking strength. The divider structure also prevents bottom sag by providing a center structure member.

In order to provide a carton which can be parted into two separate cartons, score line 18 is perforated such that properly applied force will separate the divider forming structure in half and thus separate the two compartments which they define.

FIGS. 5, 6, 7 and 8 illustrate a carton essentially the same as that illustrated in FIGS. 1 through 4 with the only distinction being the manner in which the various sections of the intermediate portion 14 are able to be positioned perpendicular to one another. In place of cuts 46 and cuts 15 the embodiment of FIGS. 5 through 8 employs score lines 52 in sections 39, 41 and 42 which fold into gussets (see FIG. 7) when the sections of the erected intermediate portion 14 (FIG. 6) are positioned perpendicular to one another. FIG. 8 illustrates the completed carton which may have glue applied at the positions generally indicated at 53 if it is desired to have the two compartments of the carton more securely connected to one another. The gusset embodiment of the invention has been found to be quicker and easier to erect while the interlocking embodiment provides the ability to separate the two compartments of the carton. Both embodiments, however, as well as other variations of the invention within the skill of the art, provide an improvement over the art in both performance and cost.

We claim:

1. In a carton having an integral divider the combination comprising:
 - a first bottom wall;
 - a second bottom wall;
 - a first divider forming section integrally connected to said first and second bottom walls, said divider forming section disposed between said bottom walls and generally perpendicular thereto;
 - a first side wall;
 - a second side wall;
 - a second divider forming section integrally connected to said first divider forming section and integrally connected to said first and second side walls, said second divider forming section disposed between said side walls and generally perpendicular thereto, said second divider forming section generally perpendicular to said first divider forming section as well;
 - a third side wall in spaced opposition to said first side wall;
 - a fourth side wall in spaced opposition to said second side wall;
 - a third divider forming section integrally connected to said first divider forming section and integrally connected to said third and fourth side walls, said third divider section disposed between said third

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and fourth side walls and generally perpendicular thereto, said third divider section generally perpendicular to said first divider section as well;

- a first top wall in spaced opposition to said first bottom wall;
 - a second top wall in spaced opposition to said second bottom wall;
 - a fourth divider forming section integrally connected to said second divider forming section and integrally connected to said first and second top walls, said fourth divider section disposed between said top walls and generally perpendicular thereto;
 - a third top wall in spaced opposition to said bottom wall;
 - a fourth top wall in spaced opposition to said second bottom wall; and
 - a fifth divider section integrally connected to said third divider section and integrally connected to said third and fourth top walls, said fifth divider section disposed between said third and fourth top walls and generally perpendicular thereto.
2. In a carton blank for forming a carton having a divider the combination comprising:
 - a first scored carton forming portion;
 - a second scored carton forming portion; and
 - an intermediate divider forming portion to which each of said scored carton forming portions is attached and which is operative to form a divider within the carton formed by said first and second carton forming portions when said portions are erected, said divider forming portion comprising: a first member attached to said first carton forming portion and generally upright with respect thereto; a second member connected to said first member along a score line and connected to said second carton forming portion and generally upright with respect thereto; said upright divider forming members comprising, bottom sections, side sections and top sections, and interconnecting gusset folds between said bottom sections and said top sections, and said side sections and said top sections.
 3. In a carton blank for forming a carton having a divider the combination comprising:
 - a first scored carton forming portion;
 - a second scored carton forming portion; and
 - an intermediate divider forming portion to which each of said scored carton forming portions is attached, said divider forming portion operative to form a divider within the carton formed by said first and second carton forming portions when said portions are erected;
 said intermediate divider forming portion comprising a first member attached to said first carton forming portion and generally upright with respect thereto, a second member connected to said first member along a score line and connected to said second carton forming portion and generally upright with respect thereto, wherein said upright divider forming members comprise bottom sections, side sections and top sections, said aforementioned sections being separated from adjacent sections by cuts, and the score line at which said divider forming panels are connected including cuts whereby adjacent sections of said intermediate divider forming portion can be interlocked into one another.
 4. In a carton having an integral divider the combination comprising:
 - a first bottom wall;
 - a second bottom wall;
 - a first divider forming section integrally connected to said first and second bottom walls, said divider forming section disposed between said bottom walls and generally perpendicular thereto;
 - a first side wall;
 - a second side wall;

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- a second divider forming section interlocked with said first divider forming section and integrally connected to said first and second side walls, said second divider forming section disposed between said side walls and generally perpendicular thereto, said second divider forming section generally perpendicular to said first divider forming section as well; 5
- a third side wall in spaced opposition to said first side wall; 10
- a fourth side wall in spaced opposition to said second side wall; 10
- a third divider forming section interlocked with said first divider forming section and integrally connected to said third and fourth side walls, said third divider section disposed between said third and fourth side walls and generally perpendicular thereto, said third divider section generally perpendicular to said first divider section as well; 15
- a first top wall in spaced opposition to said first bottom wall; 20
- a second top wall in spaced opposition to said second bottom wall; 20
- a fourth divider forming section interlocked with said second divider forming section and integrally connected to said first and second top walls, said fourth divider section disposed between said top walls and generally perpendicular thereto; 25
- a third top wall in spaced opposition to said bottom wall; 30
- a fourth top wall in spaced opposition to said second bottom wall; and 30
- a fifth divider section interlocked with said third divider section and integrally connected to said third and fourth top walls, said fifth divider section disposed between said third and fourth top walls and generally perpendicular thereto. 35

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5. In a carton blank for forming a carton having a divider the combination comprising:
- a first scored carton forming portion;
- a second scored carton forming portion; and
- an intermediate divider forming portion to which each of said carton forming portions is attached wherein said divider forming portion comprises;
- a first generally rectangular divider forming section divided by a longitudinal score line which has cuts along either end thereof;
- a pair of generally rectangular divider forming sections, one adjacent each end of said first divider forming section, each of said sections divided by score lines which are aligned with the score line dividing said first section and which have cuts along the ends thereof remote from said first section; and
- a second pair of generally rectangular divider forming sections, one adjacent each of said first named pair of divider forming sections and each of said sections divided by score lines which are aligned with the score lines dividing said first named pair of divider forming sections;
- each of said divider forming sections separated from adjacent sections by cuts which cooperate with the cuts along the score lines to form an interlocking connection between sections when said carton forming sections are erected.

References Cited in the file of this patent

UNITED STATES PATENTS

1,899,772	Richardson	Feb. 28, 1933
2,046,484	Ringler	July 7, 1936
2,758,777	Dixon	Aug. 14, 1956
2,896,837	Risucci	July 28, 1959