Dec. 13, 1960 S. MANSFIELD 2,964,229

OPEN-ENDED CARTON

Filed Nov. 6, 1957

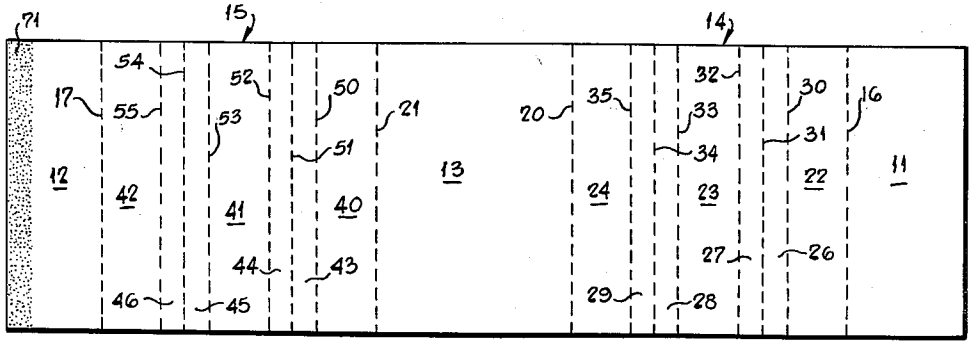


Fig-1

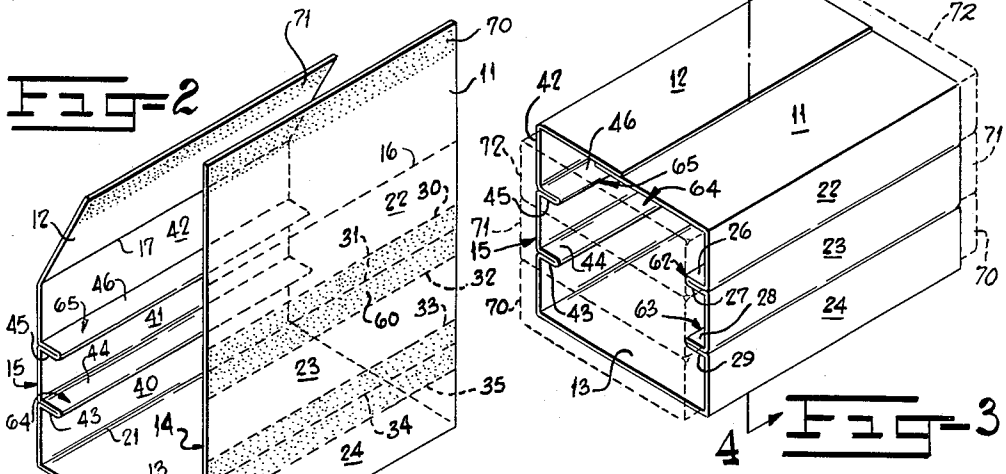


Fig-2

Fig-3

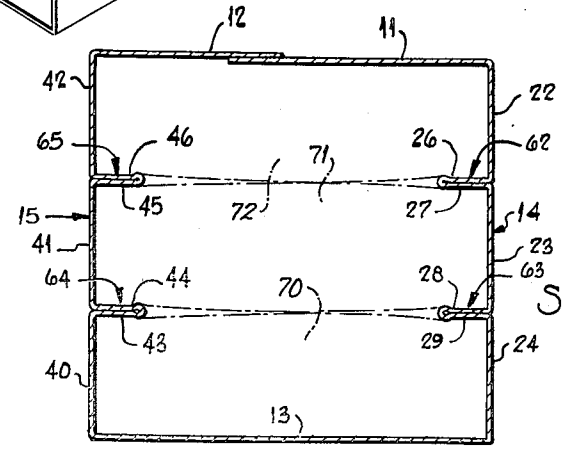


Fig-4

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OPEN-ENDED CARTON

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1 Claim. (Cl. 229—40)

This invention relates generally to an open-ended carton for retaining a plurality of rectangular articles and more particularly to a carton for retaining rectangular articles such as frozen food packages, cake and pie mixes, Jello boxes and the like.

As is well known, multiple packaging increases sales and different types of multiple packaging cartons have been developed for retaining bottled and canned goods to make the handling of these articles more convenient for the consumer. While the multiple packaging of cans and bottles has been successful, the multiple packaging of rectangular articles, such as frozen food packages, has not been successful and this is primarily due to the fact that a suitable container has not been available. Heretofore, multiple packaging cartons for rectangular articles have been too expensive to produce because they have had to completely enclose the rectangular articles in order to prevent their movement relative to each other and to retain the articles in the carton. Also, this type of multiple packaging carton is objectionable because it obscures the articles and any printed matter thereon.

With these objections in mind, it is the primary object of this invention to provide an open-ended wrap-around carton adapted to encircle and bind together a plurality of rectangular articles in a novel manner so that at least the end portions of the articles may be seen when the carton is observed by a potential consumer.

It is another object of this invention to provide a multiple packaging carton for rectangular articles having novel locking means engageable with the articles in a novel manner to prevent longitudinal movement of the articles in the carton and longitudinal or sliding movement of the articles relative to each other.

It is another object of this invention to provide a multiple packaging carton for retaining a plurality of rectangular articles which may be easily formed from a rectangular blank so that the cartons may be produced economically without any waste material and so that the cartons may be economically printed.

It is a more specific object of this invention to provide a multiple packaging carton for retaining a plurality of rectangular articles which may be economically formed from a scored rectangular carton blank to be folded and secured at opposite ends and form a tubular carton having top, bottom and side walls with article locking or wedging members spaced along the side walls. The wedge members are spaced along the side walls according to the thickness of the articles and project inwardly from the side walls and between proximal surfaces of the articles. It is only necessary that the wedge members extend inwardly between the articles a short distance to be wedged between and resiliently engage the proximal surfaces of the articles and prevent relative movement between the articles and the carton.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds when taken in connection with the accompanying drawings, in which—

Figure 1 is a plan view of the blank from which the carrier is formed, showing the relative position of the score lines along which the blank is folded when the carton is erected;

Figure 2 is an isometric view of the carton in partially erected condition;

Figure 3 is an isometric view of the carton and showing it retaining a plurality of stacked rectangular articles which are shown in dotted lines;

Figure 4 is an enlarged vertical sectional view through the carton taken substantially along the line 4—4 in Figure 3 and showing the articles in dotted lines.

Referring to the drawings, it will be noted that the carton blank, shown in Figure 1, is rectangular in shape and is provided with top walls **11** and **12** at opposite ends. The blank also includes a bottom wall **13** and side walls broadly indicated at **14** and **15**. The side walls **14** and **15** are hingedly connected to the top walls **11** and **12** along score or fold lines **16** and **17**, respectively and the side walls **14** and **15** are hingedly connected to opposite sides of the bottom wall **13** by score lines **20** and **21**, respectively.

The side wall **14** includes side panels **22**, **23** and **24** and side-by-side pairs of wedge panels **26**, **27** and **28**, **29** which are hingedly interconnected to each other and to the side panels **22**, **23** and **24** by suitable score lines **30**, **31**, **32**, **33**, **34** and **35**. The side wall **15** includes side panels **40**, **41** and **42** and side-by-side pairs of wedge panels **43**, **44** and **45**, **46** which are hingedly interconnected to each other and to the side panels **40**, **41** and **42** by suitable score lines **50**, **51**, **52**, **53**, **54** and **55**.

The carton may be erected by folding the sides upwardly along the score lines **20** and **21**, adjacent each side of the bottom wall **13** (Figure 2) and then folding the wedge panels of the side walls **14** and **15** so that corresponding wedge panels of each pair are positioned in juxtaposition relative to each other. The wedge panels may then be suitably secured together by any suitable means such as an adhesive material, indicated at **60** in Figure 2, which may be applied thereto either prior to or during folding. Of course, the wedge panels may be secured together by other means, such as staples or the like. After corresponding pairs of wedge panels have been secured together, they form wedge members indicated at **62** and **63** on the side wall **14** and wedge members indicated at **64** and **65** (Figures 3 and 4) on the side wall **15**.

Rectangular articles, such as frozen food boxes indicated at **70**, **71** and **72** in Figure 3, may be placed in the carton in any suitable manner, such as by hand or by automatic machinery. Also, the articles may be positioned between the wedge members **63**, **64** and **62**, **65** during the folding of the wedge panels or after the wedge members are formed. The top walls **11** and **12** may then be overlapped and suitably secured together (Figure 4) by any suitable means such as an adhesive material indicated at **70** and **71** applied to the proximal ends of the corresponding top panels **11** and **12** (Figure 2).

Since the inside height of the side walls **14** and **15** (Figure 4) is equal to the stacked height of the articles **70**, **71** and **72**, the top and bottom walls limit the distance between the upper surface of the article **72** and the lower surface of the article **70** and the wedge members **63**, **64** and **62**, **65** are wedged between the articles to tightly hold the articles against movement in the carton. It will be noted that, due to the folding action of the material along the score lines **31**, **34**, **51** and **54**, enlarged ribs are formed along the inner edges of the respective wedge members **62**, **63**, **64** and **65**.

These ribs act to further wedge apart the proximal

surfaces of the articles and help prevent relative longitudinal movement of the packages 70 through 72 in the carton 10. The ribs on the inner ends of the wedge members 62 through 65 are formed as a matter of course when the wedge panels are folded to juxtaposition since it is virtually impossible to fold a paperboard material upon itself without the formation of a thickened rib along the fold.

Although each wedge member is shown extending inwardly substantially one-eighth the distance from one side wall to the other, the distance the inner edges of the wedge members 62 through 65 extend inwardly between the proximal surfaces of the articles is not critical as long as the inner edges extend inwardly further than any radius at the corners of the packages held thereby and therefore, rectangular blanks which are the same size may be used to package articles of different sizes. Thus, if it is desired to package rectangular articles which are slightly thicker than those illustrated at 70, 71 and 72, the position of the score lines on each of the side walls 14 and 15 could be shifted so that the wedge panels are not as wide as those shown to thus provide greater width in the side panels so that they will accommodate articles of greater thickness without changing the overall length of the blank.

Although a carton has been shown which is particularly adapted to receive and retain three rectangular articles, it is to be understood that the number of rectangular articles retained thereby could be decreased or increased by merely adding or removing a corresponding number of side panels and wedge panels on each of the side walls 14 and 15. Also, although the open ends of the carton shown extend relatively close to the ends of the rectangular articles, it is to be understood that the width of the blank could be reduced so that the carton would cover only a small portion of the rectangular articles.

Although the terms "top wall" and "bottom wall" have been used throughout the specification to designate certain portions of the carton blank and carton formed therefrom, these terms were selected to correspond to the manner in which the carton is erected and shown in the drawing. It is apparent that the carton and articles contained therein are shown being assembled in inverted position from their normal display position.

It is thus seen that an open-ended wrap-around carton has been provided to encircle a plurality of stacked rectangular articles with wedge members carried by the carton and extending between proximal surfaces of the articles to resiliently retain the articles in fixed position inside of the carton.

In the drawings and specification there has been set forth a preferred embodiment of the invention and, although specific terms are employed, they are used in a generic and descriptive sense only and not for purposes of limitation, the scope of the invention being defined in the claim.

I claim:

A package comprising a plurality of stacked compressible rectangular articles such as boxes of frozen food and an open-ended carton surrounding and confining the stacked articles therein, said carton comprising a scored uninterrupted sheet of paper board defining interconnected top, bottom and side walls, each of said walls comprising a plurality of side wall portions corresponding in number to the retained articles, a plurality of wedge members extending inwardly from said side walls between adjacent rectangular articles, each of said wedge members comprising a pair of wedge panels hingedly connected together along their inner edges and to corresponding side wall portions along their outer edges, means for securing said wedge panels in overlapping relation to maintain the side wall portions of the carton in abutting relation, the distance between adjacent wedge members being less than the normal thickness of the article positioned therebetween to deform and compress the engaged portions of the article therebetween and engaged portions of adjacent articles to thus securely retain the articles in the carton.

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UNITED STATES PATENT OFFICE

CERTIFICATION OF CORRECTION

Patent No. 2,964,229 December 13, 1960

Sanford Mansfield

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 4, line 22, after "said" insert -- side --.

Signed and sealed this 9th day of May 1961.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

DAVID L. LADD
Commissioner of Patents