Sept. 29, 1970 W. G. ATKINSON 3,531,042

END STRUCTURE FOR AN END-LOADING CARTON HAVING A DIVIDER

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FIG. 1

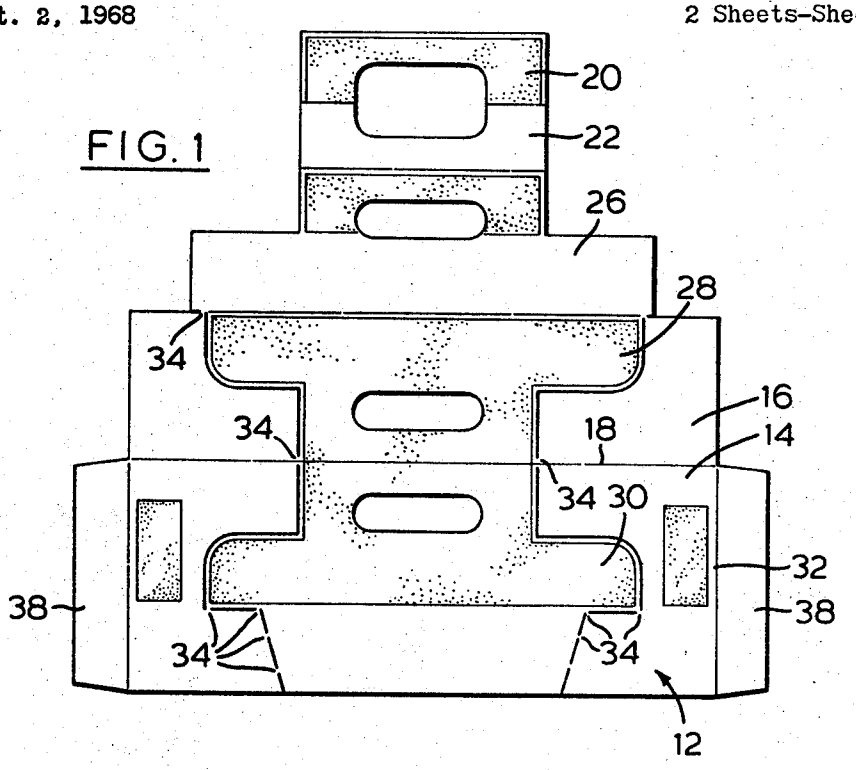
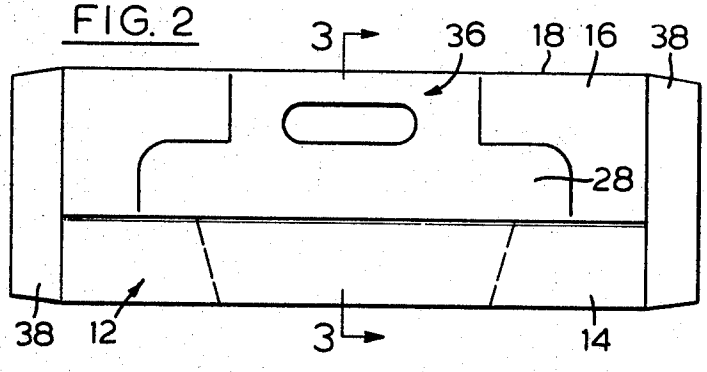


FIG. 2



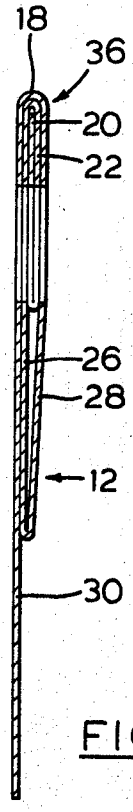


FIG. 3

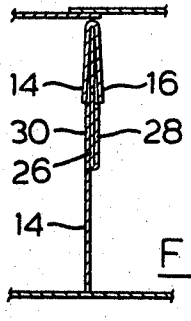


FIG. 6

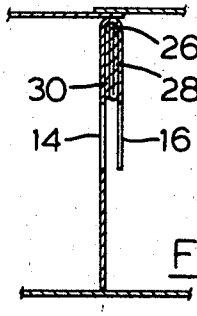


FIG. 7

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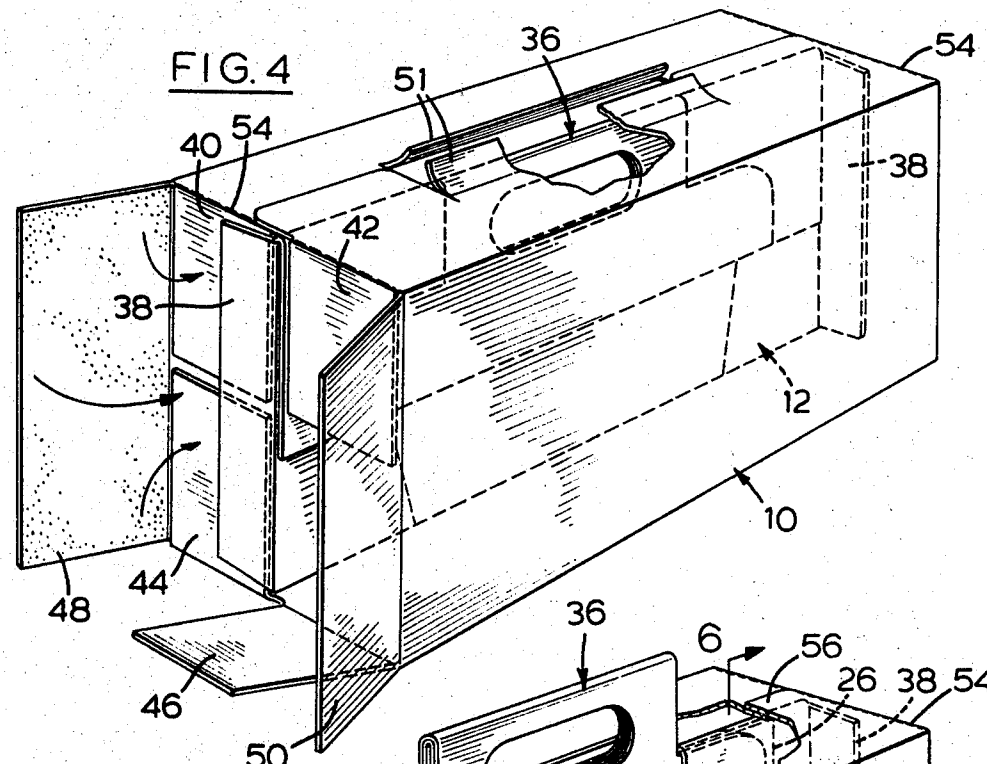
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FIG. 4



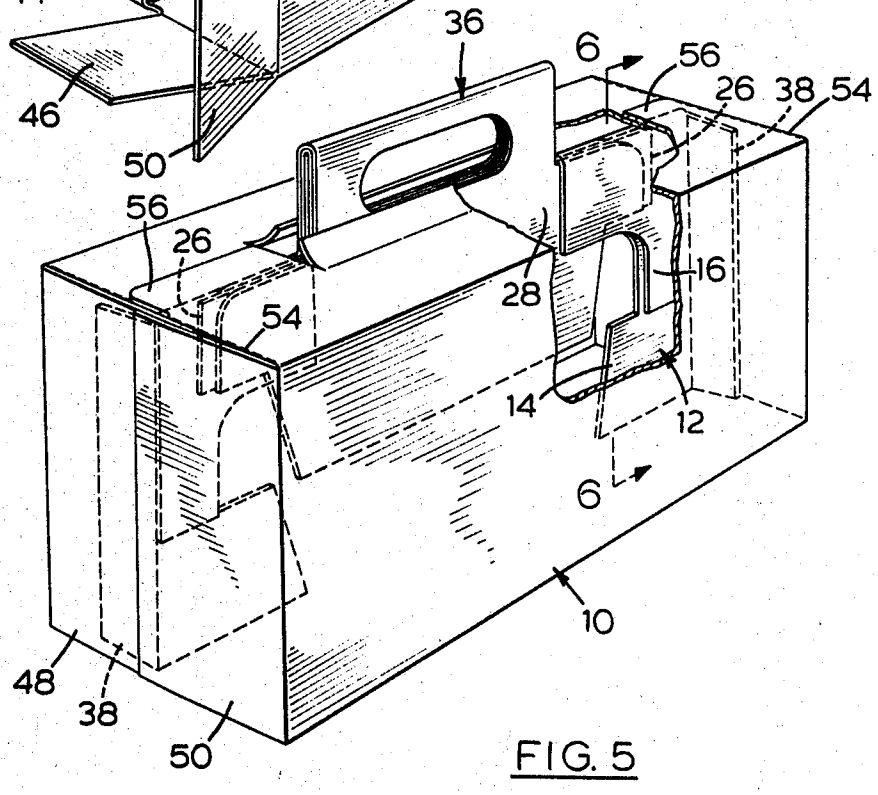


FIG. 5

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END STRUCTURE FOR AN END-LOADING CARTON HAVING A DIVIDER

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Int. Cl. B65d 5/02, 75/00
U.S. Cl. 229—37 1 Claim

ABSTRACT OF THE DISCLOSURE

This invention relates to a carton having a longitudinal divider of the type commonly used to pack bottled beverages such as beer. The carton is loaded through an end and a longitudinal divider is separately formed and is secured into place in the carton by means of end flaps on the divider that are interlocked with the overflapping flaps that form the end closure. The carton is opened by forming an opening in the top wall. The whole construction is one wherein the divider can be simply formed and positively locked within the container as the container is closed.

This invention relates to an end loading paperboard carton and a longitudinal divider therefor.

Cartons adapted to be loaded through an open end thereof have been widely used in the past. They have an advantage from a loading point of view in that the wares can be pushed laterally into the open end of the carton rather than dropped into the open top of a carton. In the case of bottled beverages, this is a substantial advantage.

With bottled beverages it is usually necessary to provide a divider to separate rows of bottles within the carton to minimize breakage and, in the case of end loading cartons, difficulty has been experienced in providing a satisfactory means for securing the divider into the carton.

It is, therefore, an object of this invention to provide a reliable means for securing a divider into a carton of the end loading type wherein the divider is positively located and wherein the divider remains postively located after the container is opened in the customary manner by breaking into the top wall.

With these and other objects in view, this invention comprises an end loading paperboard carton and a longitudinal divider therefor, the carton having top, bottom, side and end walls formed from hinged panels, closure for the carton being at the end walls. The end walls comprise overlapping flaps hinged to the bottom, top and side walls. The longitdinal divider has flap means at each end and the flap means on the divider are in interlocking relation with the overlapping flaps that constitute the end walls whereby the divider is maintained in position held between the end walls in a set up carton. The top wall is formed with weakened lines to define a top opening means whereby access to a filled carton can be gained. The invention will be clearly understood after reference to the following detailed specification read in conjunction with the drawings.

In the drawings:

FIG. 1 is a blank for forming a divider handle unit;

FIG. 2 is a view of the divider handle unit folded and ready for insertion into a carton;

FIG. 3 is a cross-sectional view along the line 3—3 of FIG. 2;

FIG. 4 is a view of a carton as it is being set up with the divider unit shown in FIGS. 1–3;

FIG. 5 shows the carton in a set-up position and partly broken away to illustrate the manner in which the extensible handle portion of the divider is withdrawn;

FIG. 6 is a view along the line 6—6 of FIG. 5, but before the handle portion is extended as shown in FIG. 5. It illustrates the position of the parts when the divider handle unit is in the position illustrated in FIG. 4 of the drawings; and

FIG. 7 is a view along the line 6—6 showing the handle divider unit in the position illustrated in FIG. 5.

Referring to the drawings, the numeral **10** generally refers to a carton of the end loading type having a divider handle unit, generally indicated by the numeral **12**, extending longitudinally thereof between its end walls. Cartons of this general type are well known. In use, the contents are loaded through an open end wall. They have an advantage over a top loading carton in cases where bottled goods are involved because the loading operation can be performed without the dropping of the contents into an open top closure. In end loading, it is usual to push the contents in a horizontal direction into an open end of the carton and then close the flaps that constitute the end wall to seal the carton.

This invention is primarily concerned with the mounting of a longitudinal divider in such a carton.

The dvider handle unit for the carton illustrated is blanked from a single piece of paperboard.

It comprises a divider wall, generally indicated by the numeral **12**, and formed from panels **14** and **16** folded about a crease line **18** to form an envelope structure for a multiply handle having an extensible handle portion, generally indicated by numeral **36**, that is adapted to extend through an opening in the upper edge and on the crease line **18** thereof, as will be apparent.

The divider handle unit blank has panels **20**, **22**, **26**, **28**, **30** and **32**, all joined by fold lines where indicated, with the exception that the panels **28** and **16** and the panels **30** and **14** are separated from each other as indicated by a through cut, except at spaced apart points **34** which are adapted to hold the parts in place as shown in FIGS. 1, 2, 3, 4 and 6 but to be broken in use to permit the handle to separate from the envelope divider wall **12** as shown in FIGS. 5 and 7.

To form the divider handle unit for insertion into the carton, panel **20** is first folded over panel **22** and then the panels **20** and **22** are folded over the handle portion of panel **26** to give a multiply extensible portion **36** to the handle, as will be explained later.

Panel **26** is aguide panel, which in use slides between the outside panels **16** and **14** of the envelope divider wall, and the next step in the construction of the divider handle unit is to fold the structure about the fold line between guide panel **26** and wall panel **16**. It will be noted that the edge of the shoulder portion of guide panel **26** overlies and extends beyond the edge of the shoulder portion of handle portion **28**, but that the handle portion of panel **26** coincides with handle portion of panel **28**.

The handle divider unit is completed by folding the previously folded sections about the line **18** to form an envelope unit having an envelope divider wall formed by the panels **16** and **14** and a multiply handle **36** having an extensible portion formed by the panels **20**, **22** and the handle portions of the panels **26**, **28** and **30**, as shown in FIG. 3, and a laterally extending shoulder formed by the free edge of guide panel **26** at the base of the extensible portion, as shown in FIGS. 6 and 7.

The handle panel **14** preferably extends lower than its companion panel **16** and is preferably adapted to extend to the bottom of the carton within which it is mounted.

As indicated above, the unit as illustrated in FIG. 2 of the drawings is formed from a single piece, but the multiply handle thereof is connected to the wall portions thereof only at spaced apart points so that it can be broken from the divider wall to permit the extensible gripping portion of the handle, generally indicated by the numeral **36**, to be withdrawn through an opening in the top of the carton, as will be explained later.

The points **34**, at which the handle is initially and severably connected to the divider wall, are located preferably at the fold line **18** and on the lower portion of the wall **14**. as indicated. When the points **34** are located in this way, the edges of the walls **14** and **16** at the shoulders of the handle section tend to spring outwardly to form an opening, as illustrated in FIG. 6, so that the handle section, when severed from the divider wall, can smoothly slide upwardly and into the envelope section. As indicated above, guide panel **26** extends beyond the outer ply **28** of the handle and by reason of its greater extent guides the handle unit into the envelope section after the handle unit has been severed therefrom and as it is drawn upwardly to cause the upper edge of the guide panel to engage with the fold of the divider at the crease line **18**.

Glue is applied to the blank, as indicated by the hatched lines at panels **20**, **26**, **28** and **14**, to secure the unit together as it is folded in the manner described above.

The divider unit has flaps **48** at each of its ends for the purpose of securing it into a carton.

An important feature of this invention is the manner in which the flaps **38** cooperate with the specially formed flaps that constitute the end wall of the container to secure the divider into position.

In this connection, it will be noted that the container, generally indicated by the numeral **10**, has similar end walls, each of which is constituted by a pair of spaced apart flaps **40** and **42** hinged to the top wall of the container, a pair of flaps **44** and **46** hinged to the bottom wall of the container, a flap **48** hinged to a side wall of the container and a flap **50** hinged to the opposite side wall of the container.

The divider unit, generally indicated by the numeral **12**, is secured rigidly in position to extend longitudinally of the carton by first folding flaps **40** and **44** to a closed position, then folding the flap **38** to overlie flaps **40** and **44** on their outer side and then folding flaps **42** and **46** into position, and finally folding flaps **48** and **50** into position. Flap **38** carries an adhesive so that it bonds with flaps **40** and **44**. Flaps **48** and **50** carry an adhesive so that they bond with the flaps **40**, **44**, **38**, **42** and **46**.

The flaps **38** are preferably short of one-half the width of the flaps **40** for best gluing conditions. However, this is a matter of choice and it would be possible to have the flaps **38** extend all the way across flaps **40**. It is only necessary that a good anchoring be achieved and this can be done within wide limits of the broad concept of interleaving the flaps **38** between the flaps **40** and **48**.

The divider unit is secured into position in identical fashion at each end, and it will be apparent that when this is done, the divider unit is securely mounted within the carton **10** to divide it in a longitudinal direction. The carton is especially useful for carrying bottles of beverage with one row of bottles on each side of the divider unit **12**.

The top wall of the carton is provided with flaps **50** which can be manually parted to permit one to insert one's fingers into the carton to grip the handle portion **36** of the handle unit, sever the connections **34** with a sharp

pull and withdraw it from the carton to the position indicated in FIG. 5. The points of connection **34** between the handle and the divider wall can be easily broken by an upward pull to permit the handle to be withdrawn through the opening in the top edge of the divider unit. In transit the handle portion supports the container on the shoulder portion of guide panel **26**.

To remove the contents, the top wall of the container is broken and, in this connection, the top wall is formed with a weakened line along its ends as at **54** and tabs **56** that can be lifted. One merely lifts the tab and rips the top wall back. The opening, once formed, can easily be enlarged.

It will be apparent that, as the opening is formed to get at the contents of the carton, the union between the divider and at carton is not disturbed and that the carrier divider handle unit is fully operative after the carton has been opened.

Auxiliary means in addition to the flaps **38** may be used for securing the divider into the carton. For example, one may, in addition to flaps **38**, employ a flap that extends laterally of the bottom edge of the divider and that is adhesively secured to the bottom of the container.

The particular construction of the divider and the manner in which the extensible handle portion functions is not of importance in this invention. This invention is concerned primarily with the manner of mounting the divider in an end loading carton. The invention is useful with any kind of divider where there is a need for rigidifying the divider with respect to the end walls.

What I claim as my invention is:

1. An end loading paperboard carton comprising top, bottom, side and end walls formed from hinged panels, the closure for said carton being the said end walls, said end walls comprising overlapping bonded flaps hinged to said top, bottom and side walls, a divider having flap means at each end thereof, said flap means being secured to opposed end walls to maintain the divider in position in said carton, said flap means on said divider being interposed between overlapping flaps that constitute an end wall whereby to maintain said divider in position as aforesaid at said wall, said top wall being formed with weakened lines to define a top opening means whereby access to a filled carton can be gained, said overlapping flaps that constitute said end wall between which said flap on said divider is interposed including a first pair of flaps hinged to said top wall and separated by a space, a second pair of flaps hinged to said bottom wall and separated by a space, said flap means on the ends of said divider extending through the space between said pairs of flaps and then folding to lie juxtaposed to one flap in each of said pairs, said side walls having flaps that overlie said first and second pair of flaps and said flap means on said divider.

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U.S. Cl. X.R.

220—105; 229—15, 52