May 12, 1970 T. K. DEWS 3,511,434

HANDLE DIVIDER CONSTRUCTION

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FIG. 1

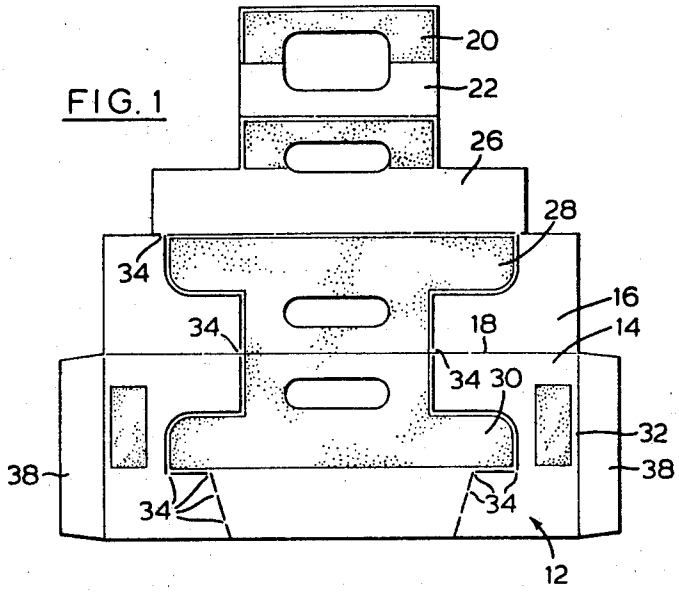
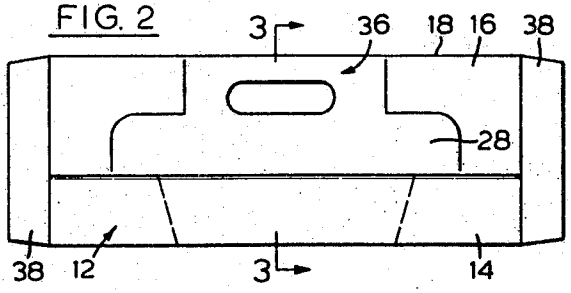


FIG. 2



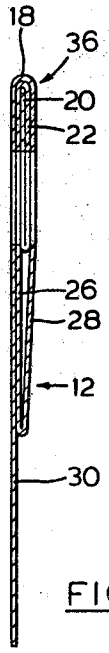


FIG. 3

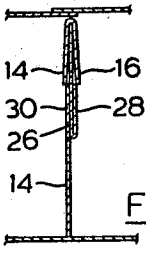


FIG. 6

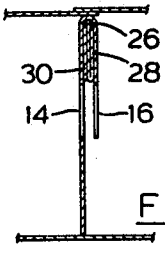


FIG. 7

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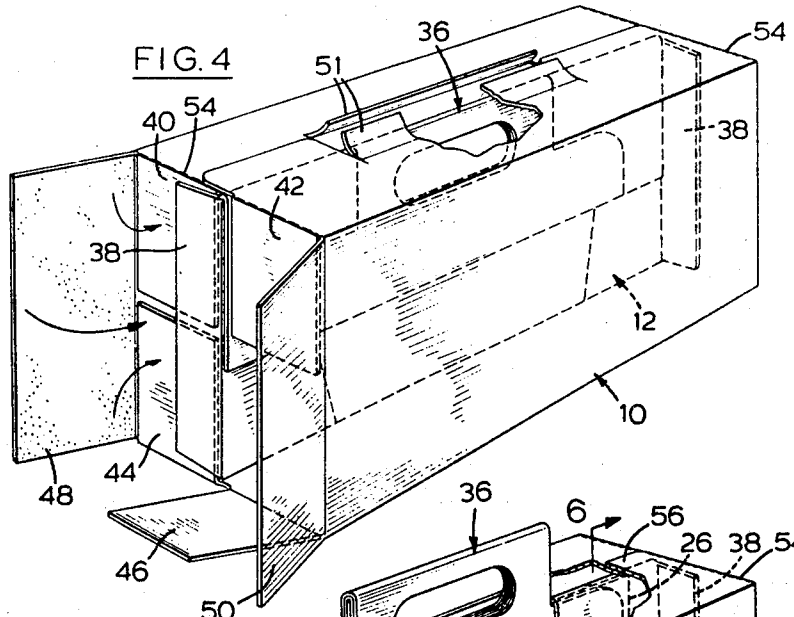
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HANDLE DIVIDER CONSTRUCTION

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FIG. 4



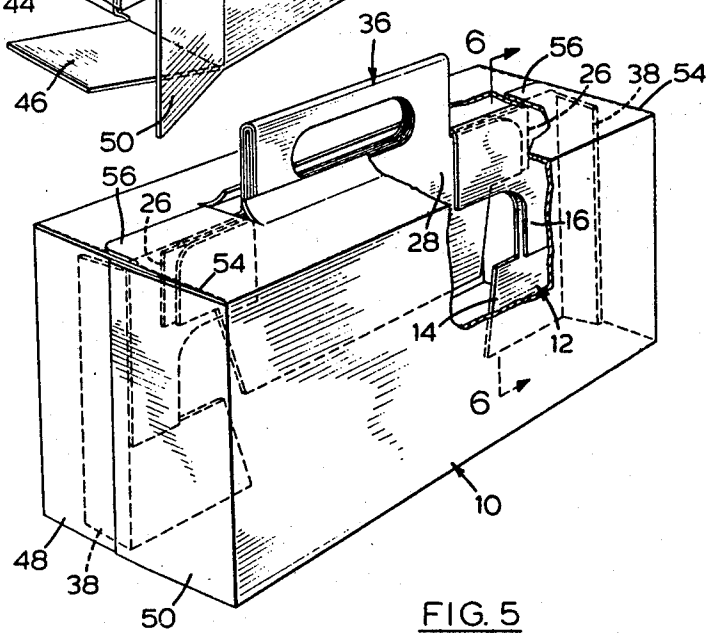


FIG. 5

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HANDLE DIVIDER CONSTRUCTION

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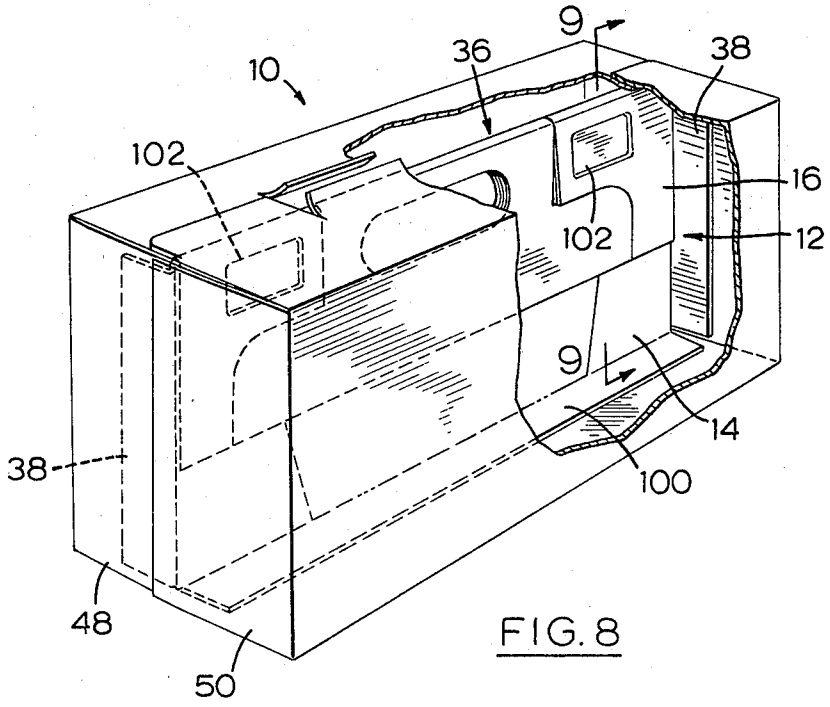


FIG. 8

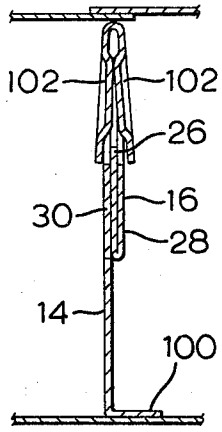


FIG. 9

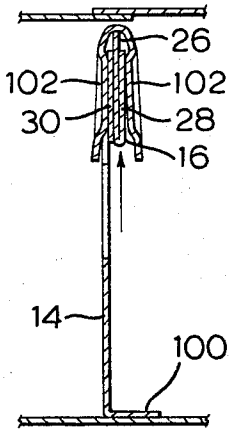


FIG. 10

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United States Patent Office 3,511,434
Patented May 12, 1970

3,511,434

HANDLE DIVIDER CONSTRUCTION

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Filed June 3, 1968, Ser. No. 734,121
Claims priority, application Canada, Nov. 20, 1967, 5,510
Int. Cl. B65d 5/46, 25/28, 75/00
U.S. Cl. 229—52 7 Claims

ABSTRACT OF THE DISCLOSURE

This invention relates to a handle divider construction for use with paperboard containers commonly used to carry bottled beverages. It consists essentially of an envelope formation that acts as a divider wall in the container and that has opposed panels that normally house a multiply handle. The multiply handle is fragibly connected to the envelope construction and when severed therefrom can be withdrawn through an opening at the upper edge of the divider wall. The multiply handle has a guide panel which has a greater extent than the other panels and is adapted to guide the multiply handle upwardly after it has been severed from the envelope and is raised to an operative position in which the handle gripping portion thereof extends above the divider wall and a shoulder portion thereof is in locked engagement with the folded upper edge of the envelope.

This invention relates to a handle divider unit for a paperboard carton.

Handle divider units having a divider wall that divides individual containers in a carton and a handle associated with the wall that is adapted to extend from a retracted position to an extended position are well known. They are very extensively used and require a substantial amount of paperboard to construct. Their cost, therefore, is not insignificant, but their utility is so great that the industry is willing to put up with the relatively high cost. The unit must, of course, be strong because a carton full of bottles of beverage has a substantial weight and it is the building of sufficient strength into the unit that restricts one from economizing on paperboard from which it is made.

It is an object of this invention to provide a divider handle unit that is relatively cheap to manufacture and that, at the same time, has the desired strength and convenience qualities.

It is a further object of the invention to provide a handle that can be conveniently mounted to any type of carton.

With these and other objects in view, a divider handle unit according to this invention comprises an envelope divider wall formed from two panels folded to define an upper edge, the upper edge being formed with a handle opening. A multiply handle having an extensible portion is adapted to extend through the handle opening and laterally extending shoulders at the base of an extensible portion that is adapted to engage with the inside of the upper edge of the envelope divider to limit the outward extent of the multiply handle through the opening is provided. The multiply handle has a guide panel and a guide carrier panel. The guide panel is hinged to the guide carrier panel and the guide carrier panel is stricken from one side of the envelope and frangibly connected thereto. The multiply handle has a third panel stricken from the other side of the envelope divider. The guide panel is coextensive with the guide carrier panel at the extensible portion of the multiply handle but extends beyond the guide carrier panel laterally of the extensible portion to enter between the sides of the envelope divider. The divider has means for securing it into a carton. 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;

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;

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;

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

FIG. 8 is a perspective view, partly broken away, of a further embodiment;

FIG. 9 is a view along line 9—9 of FIG. 8, and

FIG. 10 is a view like FIG. 9 but with the handle raised.

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 concerned primarily with the construction of a divider handle unit that can be conveniently mounted in an end loading carton, but which also has utility in any carton where a divider handle unit is required.

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

The embodiment illustrated comprises a divider wall, generally indicated by the numeral **12**, and formed with 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 the 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 a guide 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**.

Sliding handles in cartons of this general type and their use are, of course, well known, but the concept of this particular divider handle unit is a handle stricken from a single blank and having plies stricken from the sides of the envelope construction of the divider wall and also having a guide panel **26** carried by one of the handle plies which guide the handle upwardly into the envelope structure as the handle portion is drawn through the opening in the fold line along the crease line **18** of the envelope divider wall.

Glue is applied to the blank, as indicated by the hatched lines at panels **20**, **26**, **28** and **30** to secure the unit together as it is folded in the manner described above.

The divider unit has flaps **38** at each of its ends for the purpose of securing it into a carton.

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 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 **51** 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**.

An advantage of the construction is that one can effectively increase the number of plies of the extensible handle portion **36** of the unit to impart to this section the necessary strength. The strength of the extensible handle portion is critical. One can, of course, obtain the strength by increasing the thickness of the paperboard from which the divider is made. Increasing the thickness of the entire blank increases the cost and the wall portion of the divider need not be of an increased thickness. With this invention one can obtain additional plies in the handle portion by means of the panels **20** and **22**, which add strength only to the handle portion. In the construction the handle portion is five ply. The divider wall is one- or two-ply, depending upon the location. One or two plies of almost any thickness of board is sufficient for the divider wall, and one can construct the divider unit of this invention of a relatively thin board because one can build up the necessary strength in the handle section by means of additional plies.

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 the carton is not disturbed and that the carrier divider handle unit is fully operative after the carton has been opened.

It will be noted that the panel **14** extends to the bottom of the carton and also that the lower edge of the severable handle extends to the bottom of the carton. Thus, after the handle has been raised and used, it can be returned into the carton and the bottom of the handle will locate the handle in its original position with respect to the bottom of the carton so that it can be conveniently grabbed for subsequent use.

FIGS. 8 to 10 illustrate a further embodiment of the invention wherein auxiliary means are provided for holding the envelope in an open position to receive the multiply handle and where there is an additional flip **100** along the bottom edge of the divider handle unit for securement to the bottom of the carton. In this embodiment similar numbers refer to common elements in the embodiment of FIGS. 1 to 7. The additional means for maintaining the envelope open comprise an inwardly extending boss **102** formed in each of the panels **16** and **14** laterally of each end of the handle portion **36**, so that the inwardly extending bosses cooperate to maintain the panels **14** and **16** in a flared position when they are in the envelope formation whereby the envelope formation is open to receive the handle portion when it is lifted. In this embodiment, the severable connection between the multiply handle is along the portion where it connects with the flap **100**. Flap **100** is adhesively secured to the bottom of the carton.

What I claim as my invention is:

1. A paperboard divider handle unit for a carbon comprising an envelope divider wall formed from two panels folded to define an upper edge, a multiply handle having an extensible portion adapted to be contained by said envelope and also adapted to be extensible from said envelope, said multiply handle having a guide panel and a guide carrier panel, said guide carrier panel being stricken from one of said two panels of said envelope, a frangible connection between said multiply handle and at least one of said two panels, said multiply handle having a third panel stricken from the other of said two panels of said envelope, the upper edge of said handle being included in said uper edge of said envelope when said handle is contained by said envelope, said handle being extensible from said envelope divider when said frangible connection is broken to provide a handle opening in said upper edge of said divider through which said extensible portion of said handle can extend, said multiply handle having laterally extending shoulders at the base of said extensible portion adapted to engage with the inside of the upper edge of said envelope to limit the outward extent of said multiply handle through said handle opening, said guide panel being laminated with said guide carrier panel at said extensible portion of said multiply handle, said guide panel extending beyond said guide carrier panel laterally of said extensible portion to enter between the sides of said envelope, and means for securing said divider in a carton.

2. A divider handle unit as claimed in claim 1, in which the extensible portion of said multiply handle has at least one additional ply at the gripping portion thereof.

3. A divider handle unit as claimed in claim 1, in which the extensible portion of said multiply handle has a plurality of additional plies at the gripping portion thereof.

4. A divider handle unit as claimed in claim 1, in which the extensible portion of said multiply handle has at least one additional ply at the gripping portion thereof hinged to said guide panel.

5. A divider handle unit as claimed in claim 1, in which the extensible portion of said multiply handle has a series of hingedly connected additional plies at the gripping portion thereof, said series being hingedly connected to said guide panel.

6. A paperboard divider handle unit, as claimed in claim 1, wherein said panels of the said envelope divider wall have boss means cooperating between said two panels to maintain said envelope in an open position to receive said multiply handle as said extensible portion is caused to extend through said handle opening in use.

7. A paperboard divider handle unit for a carton, as claimed in claim 1, wherein said handle has a portion that is adapted to extend to the bottom of said container when it is in a retracted position.

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S. E. LIPMAN, Assistant Examiner

U.S. Cl. X.R.

220—105, 118