

April 23, 1963

E. J. GRASER

3,086,680

TOP LOADING ARTICLE CARRIER

Filed Nov. 1, 1961

4 Sheets-Sheet 1

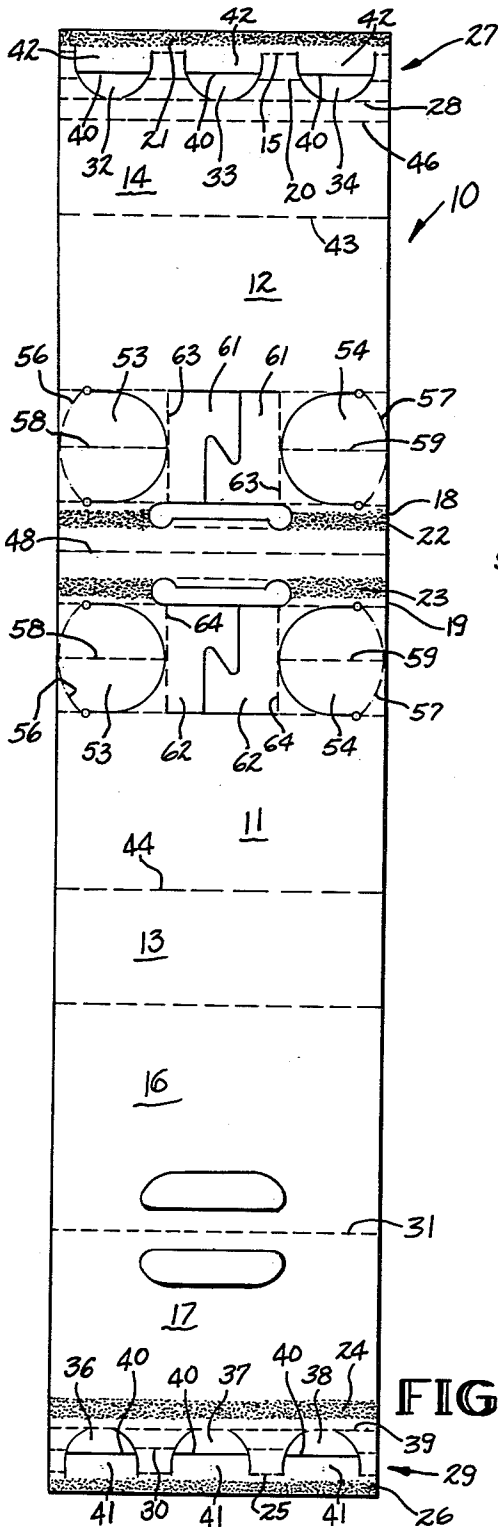


FIG-1

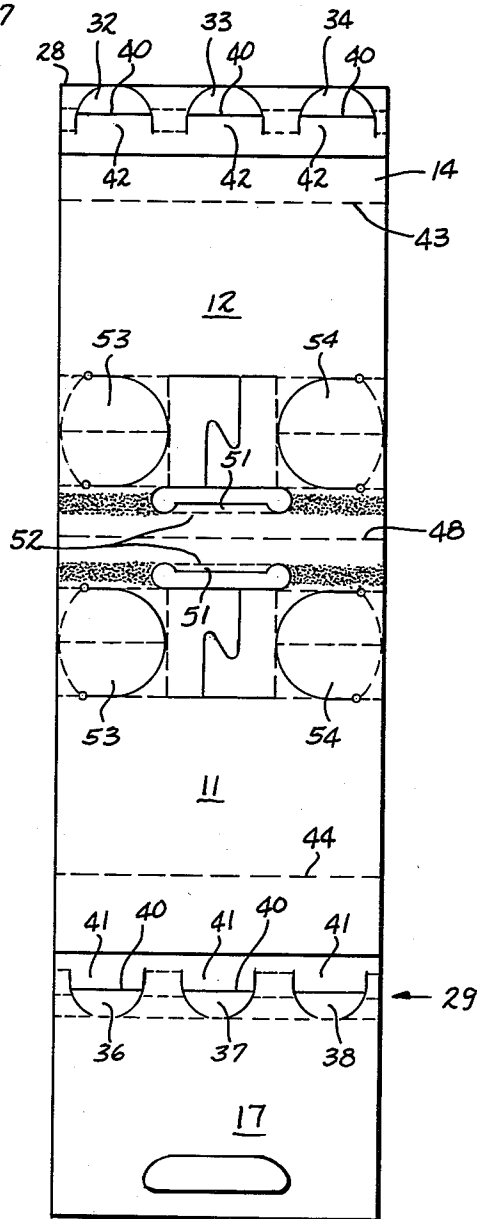


FIG-2

INVENTOR:
EARL J. GRASER
BY *R. S. Shurtle*

ATTORNEY

Filed Nov. 1, 1961

TOP LOADING ARTICLE CARRIER

4 Sheets-Sheet 2

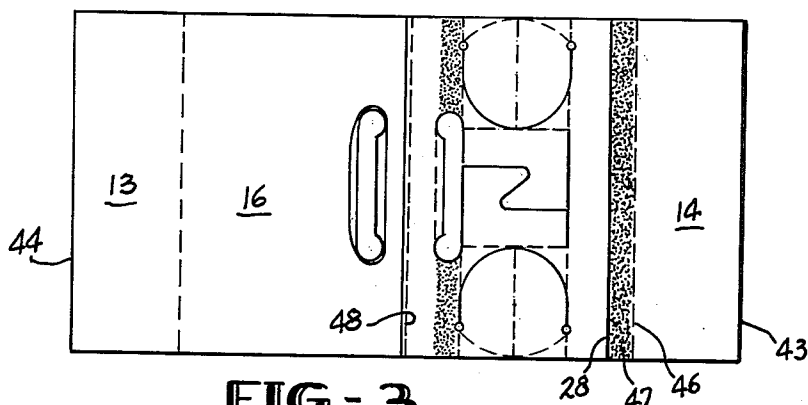


FIG - 3

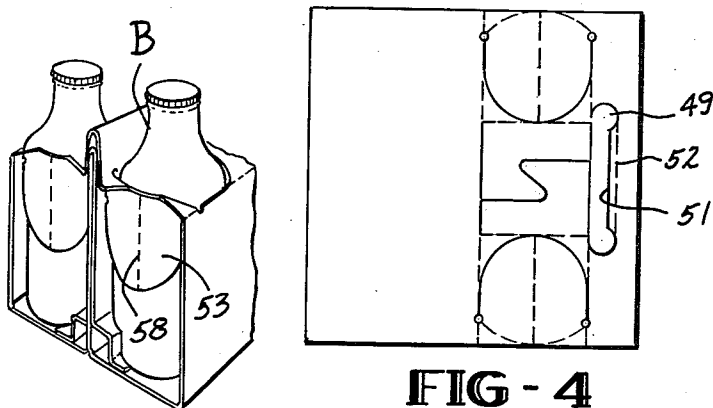


FIG - 4

FIG - 7

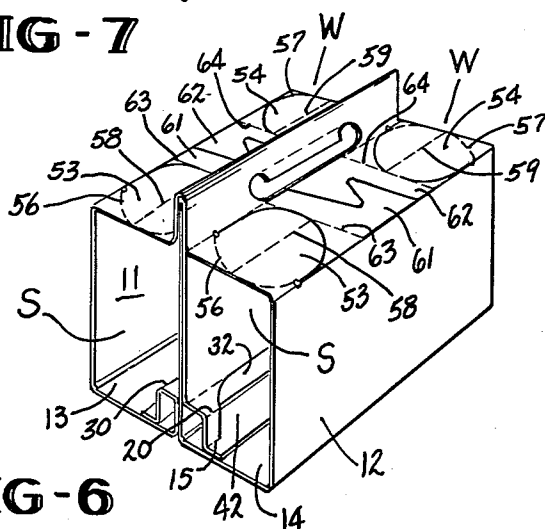


FIG-6

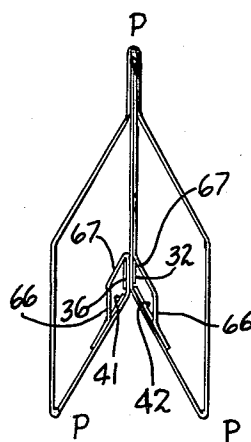


FIG - 5

INVENTOR:
EARL J. GRASER
BY *R. S. Shuttler*

ATTORNEY

April 23, 1963

E. J. GRASER

3,086,680

TOP LOADING ARTICLE CARRIER

Filed Nov. 1, 1961

4 Sheets-Sheet 3

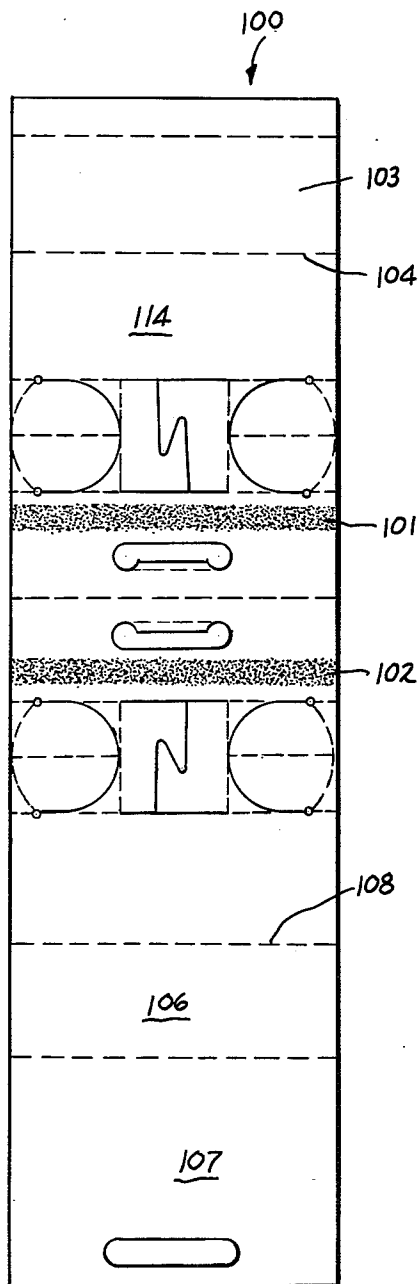


FIG - 8

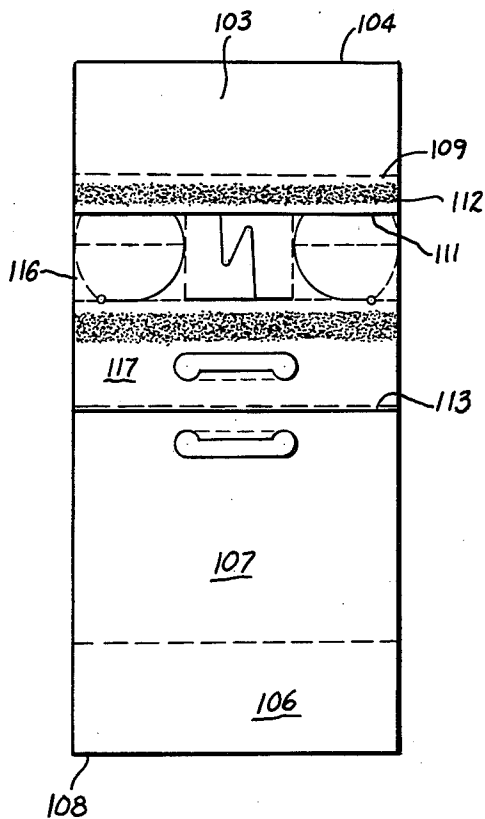


FIG - 9

INVENTOR.

EARL J. GRASER

BY *R. S. Thibault*

ATTORNEY

April 23, 1963

E. J. GRASER

3,086,680

TOP LOADING ARTICLE CARRIER

Filed Nov. 1, 1961

4 Sheets-Sheet 4

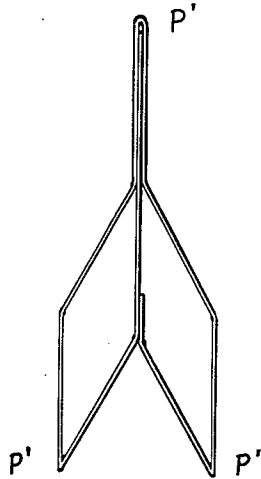


FIG - 11

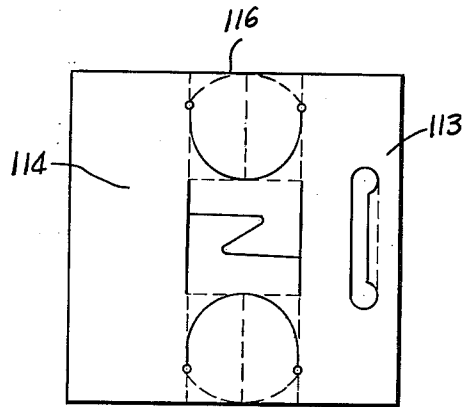


FIG - 10

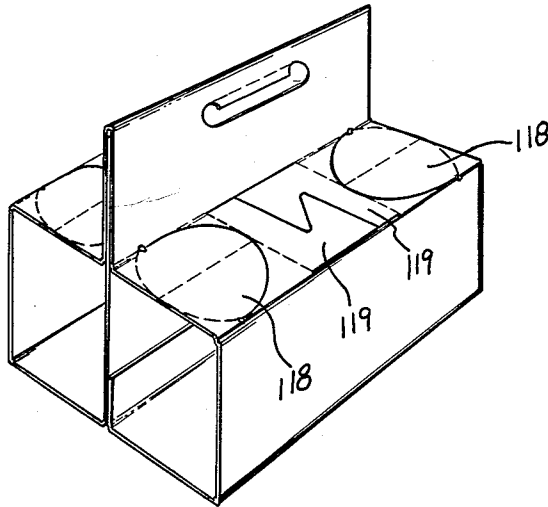


FIG - 12

INVENTOR:
EARL J. GRASER
BY *R. J. Shuttles*

ATTORNEY

1

3,086,680

TOP LOADING ARTICLE CARRIER

Earl J. Graser, Monroe, La., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed Nov. 1, 1961, Ser. No. 149,384

1 Claim. (Cl. 220-112)

The present invention relates to article carriers and in particular relates to top loading article carriers of the type in which individual units, such as glass bottles, are disposed in side-by-side rows, usually two rows where each row consists of three articles.

A particular feature of the invention is the provision of a novel top loading article carrier fabricated from a single blank of paperboard where each article housed in the carrier is separated from adjacent articles by at least a single ply of paperboard.

A further feature of the invention is the provision of an article carrier of the above class in which the bottom of the carrier is provided with a plurality of sockets arranged so that there is a socket individual to each article.

A further feature of the invention is the provision of an article carrier fabricated from a single blank of board where the blank from which the article is erected has a uniform and regular peripheral contour free of notches, cut-outs, etc. so that the perimeter of the blank defines a regular rectangle which will readily "nest" with other blanks of similar contour.

It is a further feature of the present invention to provide an article carrier of the above general class wherein the gluing steps necessary to bond the various margins of the blank together in fabricating the carrier are accomplished by bonding marginal portions of the blank which define generally parallel strips so that the gluing operation can be conducted in automatic machinery in a so-called "straight line" operation.

Stated otherwise, the structural features of the bottle carrier of the present invention are so designed and arranged that all gluing steps can be conducted in a single straight line pass through a gluing machine.

Straight line operation, of course, is to be contrasted with slower and more expensive carrier fabrication processes and machinery which require that the carrier be moved first along one path and then along a path normal to the first path to apply glue to strips or margins that are perpendicular to one another.

Other features and advantages of the present invention will become more apparent from an examination of the succeeding specification when read in conjunction with the appended drawings in which:

FIG. 1 is a plan view of a blank from which a carton embracing the principles of the present invention may be erected;

FIG. 2 is a view similar to FIG. 1 after two end folding steps have been accomplished;

FIGS. 3 and 4 show the appearance of the blank after three more folding operations;

FIG. 5 shows an end view of the folded and glued blank of FIG. 4 partially erected;

FIG. 6 is a perspective view of a fully erected carrier;

FIG. 7 is a partial view of the carrier of FIG. 6 with a bottle inserted;

FIG. 8 is a plan view of a blank disclosing an alternative embodiment of the invention;

FIG. 9 shows the blank of FIG. 8 after two folding steps;

FIG. 10 shows the finally folded blank;

FIG. 11 shows the folded and glued blank of FIG. 10 partially erected, and;

FIG. 12 shows the fully erected carrier directed to the alternative embodiment.

2

Referring now to the drawings, the reference numeral 10 indicates a generally rectangular blank of board material having a uniform and regular perimeter defining a rectangle and embracing exterior sidewalls 11 and 12, bottom walls 13 and 14, interior sidewalls 16 and 17, and handle panels 18 and 19.

Throughout the drawings, dotted lines are intended to indicate scored or hinge lines, solid lines indicate through cuts, and hatching is intended to designate glue lines or glue margins.

In fabricating the carrier, the blank of FIG. 1 is first painted with glue along parallel glue lines indicated by the hatching and reference numerals 21, 22, 23, 24 and 26.

Next two end fold steps are performed by folding end margin, indicated by the reference numeral 27, embracing a first socket structure, about score lines 28 so that after the folding step the top portion of the blank, as viewed in FIG. 1, appears as is shown at the top of FIG. 2.

Next the interior side panel 17 contiguous with end margin 29 is folded inwardly about score 31 so that this end of the blank takes the form shown at the bottom of FIG. 2.

Note that the opposed end margins 27 and 29 of the blank 10 embrace a pattern of cut-outs which upon erection define socket structure located at the bottom interior of the carton as is apparent in FIGS. 5, 6 and 7.

The socket structure includes score lines 15, 20, 25 and 30. Ears 32, 33 and 34 are hinged at score line 28, and ears 36, 37 and 38 are hinged at score line 39. Through cuts 40 separate the ears from lips 41 and 42.

In the next fabricating step the bottom wall 14 and its adjacent end margin 27 is folded inwardly about score line 43 to the position shown at the right side of FIG. 3 while bottom panel 13 and contiguous panels 16, 17 and end margin 29 are folded about score line 44 as shown on the left side of FIG. 3.

The margin defined by score lines 28 and 46 are glued as at 47.

Thereafter the final fold is accomplished by rotating the right hand portion of the blank of FIG. 3 into overlapping relationship relative to the left hand portion thereof about the score line 48.

After this step, the blank of FIG. 1 is fully fabricated and glued and has the configuration shown in FIG. 4.

Opening 49 represents a manual access opening and tabs 51 are rotatable about score lines 52, as necessary, to provide access for grasping the carrier.

The glued and folded blank is erected by applying pressure at the points labelled P in FIG. 5, with the result that the carrier opens up fanning to a generally right angular structure shown in FIG. 6 so that the carrier defines, upon erection, two side-by-side article receiving sections identified by the letters S.

The top walls W of each section are formed with a plurality of through cuts and score lines defining end flaps 53 and 54 hinged to the top walls by score lines 56 and 57 respectively.

The end flaps 53 and 54 are also formed with diametric score lines 58 and 59 operative to provide a bowed effect when rotated to the operative position shown in FIG. 7.

In addition, the top walls W are formed with mating tabs 61 and 62 operative to rotate about score lines 63 and 64 respectively.

Referring now to the bottom of the carrier, particularly the illustrations of FIGS. 5, 6, and 7, note that the structure defines a pair of back-to-back steps each having a series of cut-outs or sockets operative to engage and receive articles, such as bottle B, inserted into the carrier from the top.

Note that upon inserting the bottles into the carrier,

there is a camming action wherein the end bottles of a given row cam the flaps 53 and 54 downwardly causing them to rotate about their hinged score lines to the position shown in FIG. 7 while the center bottle of each row separates tabs 61 and 62 causing them to rotate downwardly about their respective score lines. Camming the tabs 61 and 62 out of their co-planar relationship and into a position normal to their original plane is operative to provide a partition between the center bottle and its next adjacent end bottle.

Correspondingly, the flaps 53 and 54 provide a protective cover for the side of the bottle as shown in FIG. 7.

As a bottle, such as the bottle B, approaches the socket structure of an erected carton, the individual sockets are in the following condition:

Lips 41 and 42 lay flat and are glued to their respective bottom walls 13 and 14. Ears 32, 33 and 34 and 36, 37 and 38 are free to rotate about their respective score lines 28 and 39 with the result that score lines 15, 20, 25 and 30 flex to establish a step-like structure having intervening cut-outs providing sockets for the bottom of each bottle. The step is formed by risers 66 and the treads 67 while the individual sockets or cut-outs are formed by the rotation of the ears 32, 33 and 34 and 36, 37 and 38 rotating about their respective hinge lines.

The alternative embodiment of the invention disclosed in FIGS. 8 through 12 is fabricated in generally the same fashion except the blank does not embrace socket structure.

The blank indicated generally by the reference numeral 100 is first painted with glue along the margins referenced 101 and 102. Next bottom panel 103 is rotated about score line 104. Corresponding bottom panel 106 and central panel 107 are rotated about score line 108.

Thereafter glue is painted between score line 109 and the end of the blank 111 as indicated at 112. Thereafter the blank of FIG. 9 is folded about score line 113 so that the folded and glued blank appears as illustrated in FIG. 10 revealing sidewall 114, top wall 116 and handle panel 117.

The folded and glued carton is erected in the same

fashion as described in connection with FIG. 5 in that pressure is applied at the points P'—P'.

The erected carton appears as is shown in FIG. 12, and although there is no socket structure at the bottom of the carton, the introduction of bottles from the top of the carrier performs the same camming action relative to flaps 118 and tabs 119 as previously described relative to the FIG. 6 embodiment of the invention.

It is anticipated that a variety of design changes and other minor modifications of the present invention may be devised without departing from the spirit and scope of the invention.

What is claimed is:

A top loading carrier fabricated from a single blank of cellulosic board material operable to receive at least two rows of articles where each row embraces two or more individual articles and each article is separated from another article by at least a single ply of cellulosic board material comprising two adjacent carrier sections, each said section having opposed sidewalls and opposed top and bottom walls, each said top wall being formed with a plurality of hinged, coplanar cut-outs operative to rotate out of the plane of the top wall as the articles are loaded effective to provide transverse partitions which straddle each article after it is received in a carrier, a plurality of article receiving sockets disposed in the bottom of each section operative to receive and to retain the bottom of each article, said sockets of each section being characterized by a step-like structure having a riser and a hinged tread, the junction of the riser and the tread being intercepted at spaced intervals by arcuate cut-outs, and a multiply handle formed integrally with said top walls and two of said side walls.

References Cited in the file of this patent

UNITED STATES PATENTS

2,384,480	Lupton	Sept. 11, 1945
2,457,307	Hall	Dec. 28, 1948
2,524,517	Cole	Oct. 3, 1950
2,812,105	Parker	Nov. 5, 1957
2,899,051	Barnby	Aug. 11, 1959
2,967,003	Forrer	Jan. 3, 1961