

Jan. 25, 1955

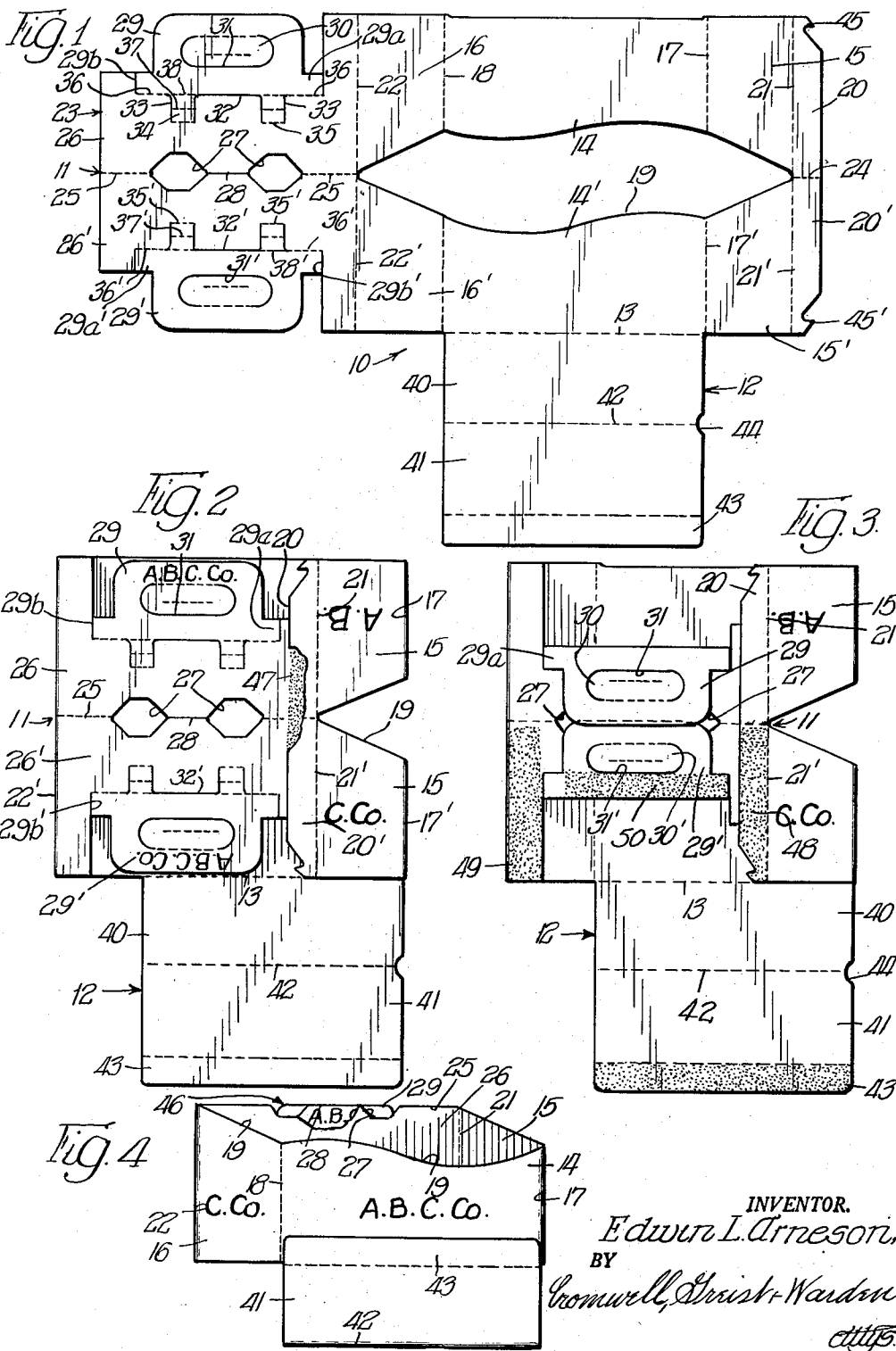
E. L. ARNESON

2,700,486

ARTICLE CARRIER

Filed Jan. 13, 1951

2 Sheets-Sheet 1



Jan. 25, 1955

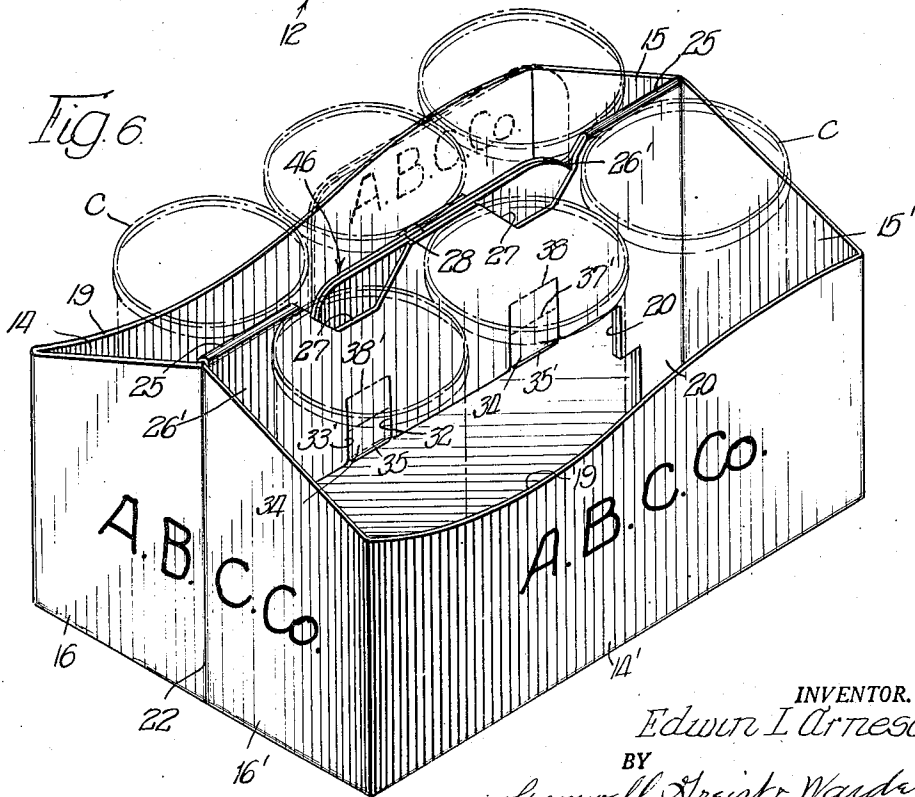
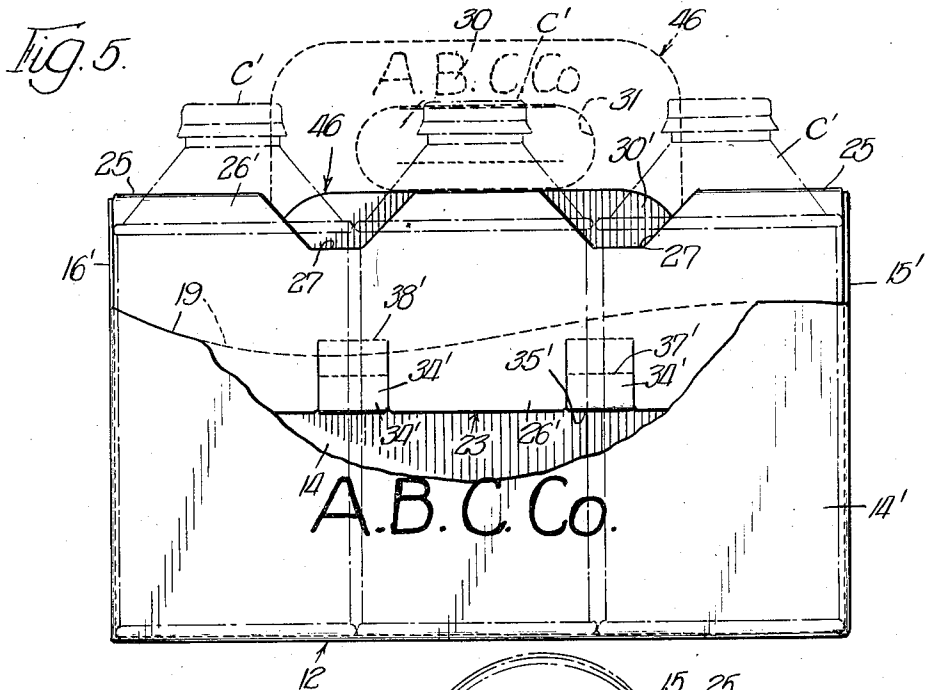
E. L. ARNESON

2,700,486

ARTICLE CARRIER

Filed Jan. 13, 1951

2 Sheets-Sheet 2



INVENTOR.

Edwin I. Arneson

BY

Fromwell, Street & Warden

*Atty*

1

2

2,700,486

## ARTICLE CARRIER

Edwin L. Arneson, Morris, Ill., assignor to Morris Paper Mills, Chicago, Ill., a corporation of Illinois

Application January 13, 1951, Serial No. 205,953

7 Claims. (Cl. 220-105)

This invention relates to an improved, relatively simple, economically manufactured carrier for a plurality of cans or like articles of uniform size and shape. More particularly, it relates to an article carrier of this general description which is well suited to receive different types of cans, etc., i. e., differing in height or outline, and at the same time to enable the loaded carriers to be stacked one directly on top of the other, regardless of the type of article involved.

It is an object of the invention to provide such an article carrier, fabricated in its entirety of a single sheet of flexible paperboard material, which has improved provisions for carrying the same, including a handle associated in a novel manner with the remainder of the carrier so as to be capable of being withdrawn below the top of cans or other articles in the carrier, thereby enabling loaded carriers to be stacked vertically one upon the other without interference by or damage to the handle, this without regard to which of several different types of article is carried.

Another object of the invention is to provide a flexible paperboard carrier of the foregoing description, characterized by opposed pairs of side and end walls and by a partition extending longitudinally between the end walls in parallel relation to the side walls, in which said partition is of multi-ply construction and has an intermediate, vertically slidable handle panel member between outer plies thereof which is hingedly articulated to those plies in an improved manner, thereby enabling its elevation above the tops of the articles in the carrier for grasping by the user or its withdrawal adjacent or below the tops of the articles, depending on the type thereof, in position for the vertical stacking referred to above.

Yet another object is to provide an improved article carrier of the above description, as well as a method of making the same, in which a specially shaped, one-piece blank is cut, creased and assembled to provide a carrier body having a two-ply longitudinal partition extending between end walls thereof, the plies of which are integrally connected by a creased folded line along the top thereof, the carrier being further provided with a two-ply suspending grip or handle having its plies integrally hinged to the respective plies of the partition and adapted for vertical sliding movement therebetween from an extended suspending position to a retracted stacking position and vice versa; the folding of the blank to form the carrier being such that a corresponding surface of the blank is exposed outwardly on both the grip and carrier body in the erected condition of the carrier, thereby eliminating the need for employing double lined stock and printing on both sides thereof in order to obtain an attractive printed handle.

A still further general object is to provide an improved blank for a retractable handle article carrier of the above sort which is well adapted for manipulation by existing, standard types of folding and gluing apparatus.

The foregoing statements are indicative in a general way of the nature of the invention. Other and more specific objects will be apparent to those skilled in the art upon a full understanding of the construction and operation of the device.

A single embodiment of the invention is presented herein for purpose of illustration, and it will be appreciated that the invention may be incorporated in other modified forms coming equally within the scope of the appended claims.

In the drawings,

Fig. 1 is a plan view showing a flexible paperboard blank from which the carrier of the invention is formed;

Figs. 2, 3 and 4 are plan views illustrating successive stages in the completion of the carrier from the blank;

Fig. 5 is a view in front elevation, partially broken away, illustrating the improved provisions of the carrier relating to the retractable carrier handle and its relation to the longitudinal carrier partition, this view also showing articles of a certain type in the carrier in different relations to the handle; and

Fig. 6 is a perspective view further illustrating structural details and relationships of the carrier, as well as showing the latter with a complement of articles of a different type from those appearing in Fig. 5.

Referring to Fig. 1 of the drawings, the blank 10 from which the carrier is made is died from suitable flexible paperboard or cardboard stock. This blank is substantially symmetrical with relation to a longitudinally extending line 11 of medial cuts, perforations and creases, with the exception of the bottom forming member or section 12. The latter is hingedly conjoined to the body portion of the blank by a margin defining crease 13 which parallels the medial, creased, perforated and cut line 11. Because of this symmetry, the various component parts, panels and other members of the blank, and the creases defining the same, which are located on opposite sides of the medial line 11 are designated by corresponding reference numerals, primed for one set of the corresponding elements. Repeated reference to the like or duplicate parts will be avoided as much as possible in the interest of simplicity.

A side wall panel 14 whose lower margin is defined by crease 13 has similar rectangular end wall panels 15, 16 hingedly conjoined thereto by creases 17, 18, respectively. The respective sets of panels 14, 15, 16 and 14', 15', 16' are separated from one another by a longitudinally extending cut 19 which, in the illustrated embodiment, is of a special curved and angled configuration. It provides attractive curved top edges for the side wall panels and angled top edges for the end wall panels, as illustrated in Figs. 5 and 6 of the drawings; furthermore, the relieved edges better display articles disposed in the carrier and increase ease of access thereto.

The right-hand end wall panel 15 is provided with a narrow glue lap extension 20, hingedly connected thereto by the crease 21. A further crease 22 paralleling crease 18 serves to hingedly connect to the opposite end wall panel 16 the partition and handle forming unit which is generally designated by the reference numeral 23.

Extensions 20, 20' on the right-hand side of the blank are hingedly connected to one another by a short horizontal crease 24 which is a component of the medial line 11 of cuts, perforations and creases, referred to above. Crease 24 is longitudinally aligned with two longitudinally spaced crease lines 25, 25' in the partition and handle forming unit 23 which integrally connect a pair of longitudinal partition panels 26, 26' of that unit to one another. Disposed between creases 25, 25' are a pair of diamond shaped openings 27 and a horizontal slit 28 connecting the same to complete the series 11. They serve to open the top of the two-ply partition constituted by panels 26, 26' when the carrier is completed, for elevating and depressing movement of a suspending handle disposed between the partition plies.

The handle referred to includes a gripping element 29 which is slitted and creased in well known fashion to outline a bendable tab 30 and provide a hand hole 31. A central slit 32 of inverted U-shape separates the central part of handle element 29 from the longitudinal partition panel 26, and short slits 33 spaced on either side of and paralleling the legs of slits 32 serve to define flexible hinge legs 34. These legs are integrally connected to panel 26 by short, longitudinally aligned creases 35. Aligned series of perforations 36 on opposite sides of the hinge legs 34 preliminarily connect a pair of side extensions 29a of grip 29 to the panel 26 and slits 29b connect the ends of perforations 36 to the margin of the blank. Perforations are broken in order to enable grips 29 to be manipulated in using the carrier, and may, indeed be broken during the gluing operation. Further trans-

3

versely spaced, horizontal creases 37, 38, the latter in alignment with perforations 36, are provided in legs 34. These render legs 34 more flexible and readily manipulated as the handle constituted by grip elements 29 is shifted vertically upwardly and downwardly between the panels 26 of the longitudinal partitions, when the completed carrier is in use.

The bottom forming section 12 comprises two like rectangular panels 40, 41 integrally hinged to one another by the medial crease 42, the panel 41 being equipped with a hinged blue flap 43. One end of the bottom member 12 is provided with an arcuate notch 44 which is intended for engagement by hook formations 45, 45' on the extensions 20, 20', respectively, of the carrier end walls 15, 15'. The multi-ply handle constituted by elements 29 is designated 46 in Figs. 5 and 6.

The operations illustrated in Figs. 2, 3 and 4 are performed in completing the carrier from the blank illustrated in Fig. 1. Partition and handle section 23 is first folded inwardly and downwardly about the aligned creases 22, 22' onto side and end wall panels 14, 14' and 16, 16', as illustrated in Fig. 2. The opposite end wall panels 15, 15', together with their attached flap extensions 20, 20', are then folded inwardly and downwardly about creases 17, 17' and secured by adhesive 47 to the adjacent margin of panels 26, 26'.

A further application of adhesive 48 is now made on the upwardly exposed surface of one of the flap extensions 20, 20', and on the upper surface of one of the panels 26, 26' adjacent the opposite side, as indicated at 49. The handle grip elements 29, 29' are then folded upwardly, inwardly and downwardly about the respective sets of perforations 36, 38 and 36', 38' into slightly overlapped relation to one another, and adhesive 50 is applied to the base of one thereof. The bottom section glue lap 43 is also coated, as indicated by stippling in Fig. 3.

Following this, the two opposite corresponding sections of the carrier are folded upon one another about the medial line 11, causing the flap extensions 20, 20' to adhere to one another, the partition panels 26, 26' to adhere to one another along their left-hand margin, and the handle elements 29, 29' to adhere to one another in the zone adjacent which they are hinged to the respective partition panels 26, 26'. The blank is completed by folding the bottom forming section 12 upon itself about its medial crease 42 and by adhering the glue flap 43 to the adjacent, upper exposed surface of the side wall panel 14. The creases 36, 36' may tear free during this folding operation thus freeing grip elements 29, 29' from panels 26, 26' except for their hinges thereto at 35, 35'. The finished carrier appears in Fig. 4 in its completed, flat, knocked-down condition, ready for shipment or storage.

The carrier is erected by exerting endwise force on the opposed end marginal creases 17, 22, which causes the side and end wall panels to approach a rectangular outline and the bottom forming member 12 to rise upwardly towards a horizontal plane. The parts are locked in place by engaging the hook 45, 45' of in-turned flap extension 20, 20' with the end terminal notch 44 of bottom section 12. This holds the carton in rectangular outline for loading by automatic equipment.

It will be noted by reference to Figs. 4, 5 and 6 that the handle 46 is normally retracted within the side-by-side longitudinal partition panels 26, 26', so that its upper edge lies approximately coincident with the upper margin of the panels. This enables the erected carrier to be filled with square topped cans of height approximating that of the longitudinal partition, as indicated in Fig. 6, the handle member 46 being disposed at or below the can tops so as not to interfere with vertical stacking of loaded carriers one directly on top of the other, in the interest of conserving space.

When it is desired to lift and suspend the carrier the handle 46 is simply grasped and drawn upwardly through the opening represented by apertures 27 and connecting slit 28, to the position illustrated in dotted lines in Fig. 6. The scores or creases 35, 37, 38 in the handle hinge legs 34 yield or buckle to permit upward shifting of the handle, and the broken perforations 36 no longer impede parallel, translational movement of its grip elements 29, 29' relative to panels 26, 26'. The carrier is suspended by the engagement of the extensions 29a, 29a' beneath the top partition fold at creases 25 as well as by the integral connection to the partition panels 26, 26'

4

of the hinge legs 34, 34'. The latter are restrained laterally and braced by the two partition panels, between which the legs are disposed, so that objectionable wobbling and instability of the carrier in transit are avoided.

In use, the hinge legs 34, 34' limit downward movement of handle 46 such as would render it inaccessible for grasping. They also prevent accidental breaking off of the grip elements 29, 29' during the course of manufacture of the carrier.

Fig. 5 illustrates the carrier loaded with cans of a different, crown top type, the handle again being shown in retracted and elevated position in solid and dotted lines, respectively. The adaptability of the carrier to handle substantially different shapes of articles is demonstrated.

A noteworthy and very important feature of the invention is the manner in which the retractable handle 46 is died out in the blank, cut, creased and folded, to the end that a finished or printed surface may be outwardly exposed on both of the grip and the side and end walls of the carrier. This result is obtained without employing double lined stock and perfecting. The progressive folding of the partition panels 26, 26' and the grip elements 29, 29' hinged thereto, as illustrated in Figs. 1, 2 and 3, causes the corresponding printed surface thereof ultimately to be exposed to exterior view. This is indicated by the lettering applied to the grip and wall panels.

The structure is very sturdy and capable of repeated use. Vertical stacking of loaded carriers, each sustained directly by the contents of the carrier therebeneath, is made possible in a standardized container which is adapted to the varying requirements of different can makers. Moreover, the carrier is fabricated of an absolute minimum of stock, considering its versatility or adaptability, as referred to above.

I claim:

1. A flexible paperboard article carrier constructed of a one-piece blank, comprising opposed pairs of side and end walls, a bottom extending between and connected at opposite sides to the walls of one of said pairs, and a medial longitudinal partition connected at its ends to the walls of the other pair, said partition comprising a pair of single ply upstanding panels disposed in parallel side-to-side relation, said panels being hinged along their upper margin and being provided with a cut along a substantial portion of said upper margin, each of said partition panels having a grip element integrally hinged thereto at a point spaced substantially below said upper margin and above the lower margin thereof by means of a plurality of vertically spaced creases paralleling said upper margin, said grip elements being disposed between and having vertically upward sliding movement between and relative to said partition panels and through said upper marginal cut as the grip element shifts about the integral hinge thereof.

2. A flexible paperboard article carrier fabricated from a single one-piece blank, comprising opposed pairs of side and end walls, a bottom extending between and connected at opposite sides to the walls of one of said pairs, and a medial longitudinal partition integrally connected at its ends to the walls of the other pair, said partition comprising a pair of single ply upstanding panels hinged in parallel side-by-side relation along their upper margin and provided with an upwardly opening cut on said margin, each of said partition panels having a grip element integrally hinged thereto between the upper and lower margins thereof by means of a plurality of vertically spaced creases paralleling said margins, said elements being temporarily connected to said respective panels adjacent the lower margin of the latter and being disposed between the partition panels for vertically upward sliding movement therebetween and through said upper marginal cut as the grip element shifts about the integral hinge thereof.

3. A flexible paperboard article carrier fabricated from a single one-piece blank, comprising opposed pairs of side and end walls, a bottom extending between and connected at opposite sides to the walls of one of said pairs, and a medial longitudinal partition integrally connected at its ends to the walls of the other pair, said partition comprising a pair of single ply upstanding panels hinged in parallel side-by-side relation along their upper margin and provided with an upwardly opening cut on said margin, each of said partition panels having a grip element integrally hinged thereto between the upper and lower

5

margins thereof by means of a plurality of parallel, vertically spaced creases, said elements being disposed between the partition panels for vertically upward sliding movement therebetween and through said upper marginal cut as the grip element shifts about the integral hinge thereof.

4. A flexible paperboard article carrier fabricated from a single one-piece blank, comprising opposed pairs of side and end walls, a bottom extending between and connected at opposite sides to the walls of one of said pairs, and a medial longitudinal partition integrally connected at its ends to the walls of the other pair, said partition comprising a pair of single ply upstanding panels hinged in parallel, side-by-side relation along the upper margin thereof and provided with an upwardly opening cut in said upper margin, each of said partition panels having a grip element integrally hinged thereto between the upper and lower margins thereof by means of a plurality of parallel, vertically spaced creases, said elements being temporarily connected to said respective panels adjacent the lower margin of the latter and being disposed between the partition panels for vertically upward sliding movement therebetween and through said upper marginal cut as the grip element shifts about the integral hinge thereof.

5. A retractable handle type article carrier fabricated from a one-piece blank and comprising pairs of side and end walls, a bottom extending therebetween and a longitudinal partition integrally connected at its ends to the walls of one of said pairs, said partition comprising a pair of single ply panels disposed in side-to-side relation and partially separated along the upper edge thereof, a grip element hinged to each of said partition panels below said upper edge thereof by means of a plurality of vertically spaced creases paralleling said edge thereof, said grip elements being folded inwardly into side-by-side relation to one another between the panels of said partition, and being vertically retractable therebetween through the separation of the latter, corresponding surfaces of said grip elements and walls being outwardly exposed.

6. A blank for a partitioned, retractable handle type article carrier comprising integrally hinged body and partition forming sections integrally connected to one another by a hinge line, the former being creased to provide integrally hinged end and side wall panels and the latter being cut and creased to provide a pair of partition

6

forming panels which are integrally hinged to one another along a fold line extending medially of the blank at a right angle to said section hinge line and coinciding with the top margin of a partition constituted thereby in the erected condition of the carrier, said partition forming panels being cut and creased inwardly of the respective bottom forming margins thereof to provide oppositely and outwardly extending grip elements hingedly connected thereto along three parallel lines of fold on opposite sides of said medial fold line, said partition forming sections being provided with a cut along said medial fold line for the sliding reception of said grip elements therebetween in the completed condition of the carrier.

7. A blank for a partitioned, retractable handle type article carrier comprising integrally hinged body and partition forming sections integrally connected to one another by a hinge line, the former being creased to provide integrally hinged end and side wall panels and the latter being cut and creased to provide a pair of partition forming panels which are integrally hinged to one another along a fold line extending medially of the blank at a right angle to said section hinge line and coinciding with the top margin of a partition constituted thereby in the erected condition of the carrier, said partition forming panels being cut and creased inwardly of the respective bottom forming margins thereof to provide oppositely and outwardly extending grip elements hingedly connected thereto along three parallel lines of fold on opposite sides of said medial fold line, said partition forming sections being provided with a cut along said medial fold line for the sliding reception of said grip elements therebetween in the completed condition of the carrier, said grip elements being attached in part to said respective partition panels by a readily rupturable connection.

#### References Cited in the file of this patent

##### UNITED STATES PATENTS

|           |            |                |
|-----------|------------|----------------|
| 1,877,601 | Shapiro    | Sept. 13, 1932 |
| 2,097,941 | Wells      | Nov. 2, 1937   |
| 2,124,955 | Quaglioth  | July 26, 1938  |
| 2,163,290 | Powell     | June 20, 1939  |
| 2,284,989 | Rue        | June 2, 1942   |
| 2,354,726 | Williamson | Aug. 1, 1944   |
| 2,522,950 | Kieth      | Sept. 19, 1950 |
| 2,609,137 | Toensmeier | Sept. 2, 1952  |