

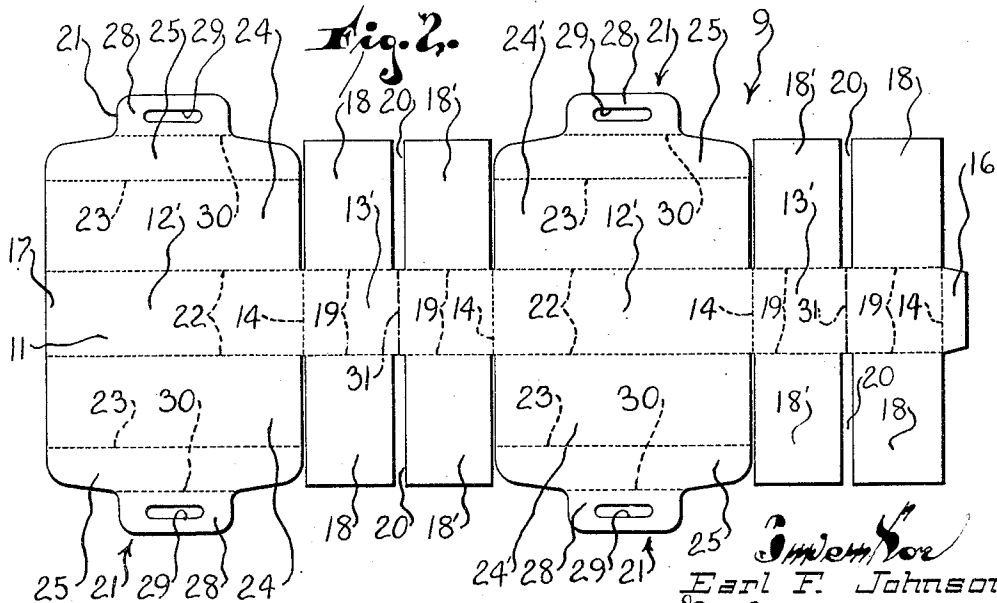
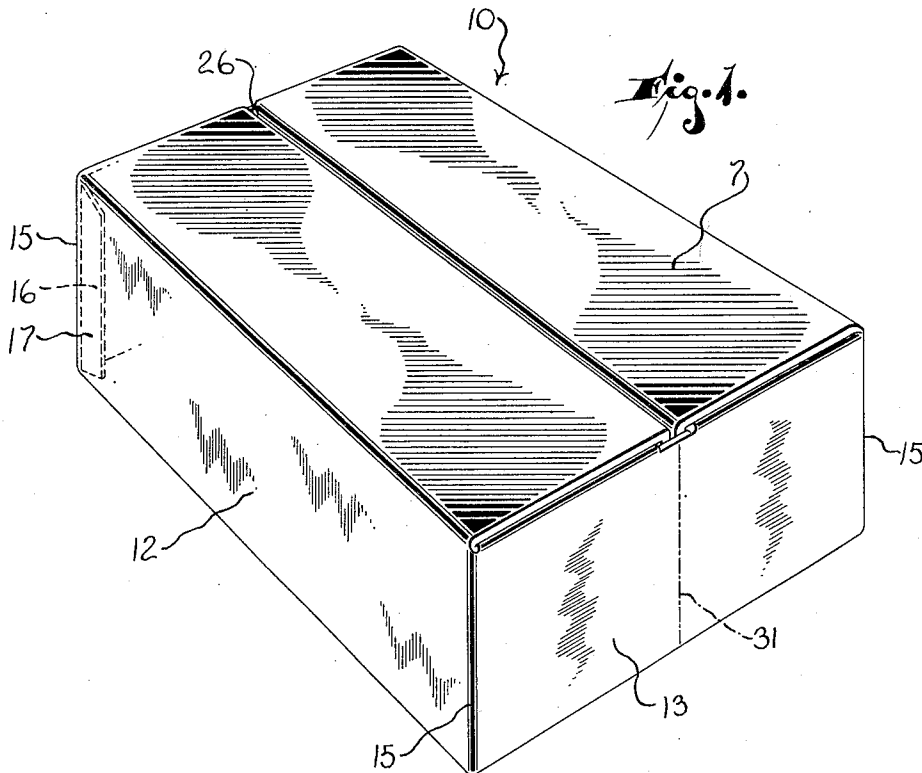
May 8, 1951

E. F. JOHNSON
DIVISIBLE CARTON

2,551,679

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2 Sheets-Sheet 1



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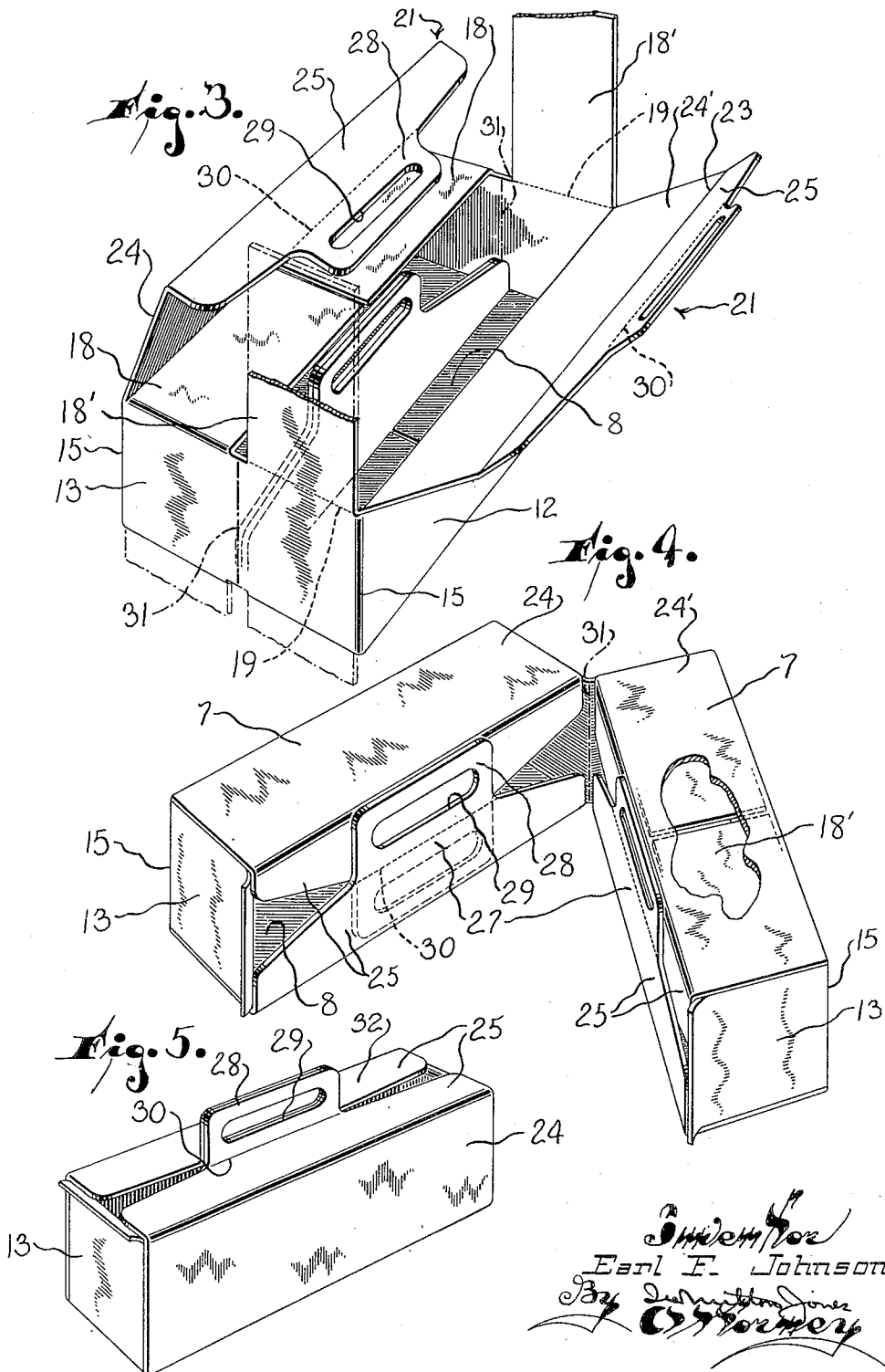
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DIVISIBLE CARTON

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8 Claims. (Cl. 229—52)

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This invention relates to cartons, and more particularly to a divisible carton capable of being formed from a single sheet blank.

A divisible carton is an especially practical container for canned and bottled goods intended to be sold from retail outlets. Customers of such stores frequently desire to purchase only a half case or half carton of such goods, confronting the dealer with the necessity of repackaging the purchase. If, for example, a full case of canned goods contains twenty-four (24) cans, and the customer wishes to purchase a half case, the dealer must find or improvise some container which will enable the customer to carry twelve (12) cans without undue inconvenience. The ordinary paper bag is obviously unsuitable for this purpose, and it is, therefore, usually necessary to spend a considerable amount of time looking for an empty box or emptying a partially full carton. Even after a makeshift container has been provided for the customer, the dealer still finds himself in possession of a full-case carton occupying the same amount of space normally allotted to twenty-four (24) cans but containing only twelve (12).

These disadvantages are immediately overcome by the use of a divisible carton for packaging canned and bottled goods, since it is only necessary to divide the carton along scored lines to provide the purchaser with a half case lot already enclosed in a convenient container.

While divisible cartons of various kinds are well known in the container art, the patent to Grecco, No. 2,359,986 being an example, none of the present types of divisible cartons is completely satisfactory. For example, it is usually necessary to cut through four walls of the carton in order to divide it, so that considerable time and effort is required to effect the division. This is particularly inconvenient when the carton is bulky or heavily loaded, since the full size carton must be laid on its side or completely turned over in order to complete the dividing cut.

By contrast, it is an object of this invention to provide a carton of the character described which may be readily separated into two complete containers of smaller size by merely making a single cut through each of a pair of opposite end walls thereof.

Another object of this invention resides in the provision of a divisible carton which may be formed from a single sheet blank and which will have a pair of adjacent partitions through its center along the line of division.

Another object of this invention resides in the

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provision of a carton of the character described which may be readily divided with a knife and which will provide a pair of smaller containers each complete in itself and requiring no further construction or assembly and no additional materials.

Another object of this invention resides in the provision of a carton of the character described which may be readily divided to provide two complete half-carton containers each having at its top a pair of flap members which need only be folded outwardly to provide a pair of handles whereby the container may be conveniently carried.

Still another object of this invention resides in the provision of a divisible carton of the character described in which the handles on the half-carton containers will be parallel to the longer dimension of the containers to enable the same to be carried with greater convenience.

With the above and other objects in view which will appear as the description proceeds, this invention resides in the novel combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the herein-disclosed invention may be made as come within the scope of the claims.

The accompanying drawings illustrate one complete example of a physical embodiment of the invention constructed in accordance with the best modes so far devised for the practical application of the principles thereof, and in which:

Figure 1 is a perspective view of the complete carton of this invention in closed position;

Figure 2 is a plan view of a single sheet blank cut and scored so that it may be folded to form the carton of this invention;

Figure 3 is a perspective view showing the carton partially folded and assembled;

Figure 4 is a perspective view of the carton partially cut, showing its two component half carton containers; and

Figure 5 is a perspective view of one of the half carton containers formed by dividing the carton of this invention.

Referring now more particularly to the accompanying drawings in which like numerals designated like parts throughout the several views, the numeral 10 designates generally the completely assembled undivided carton of this invention. Although the carton may, of course, be fabricated from a number of separate sheets

or blanks, and may be constructed of any suitable material, the advantages of this invention are best realized when the carton is made from a single sheet blank 9, preferably cut or stamped from corrugated "kraft" board.

A strip 11, defined by slits and scores in the blank 9, extends medially through the entire length of the blank. This strip, when folded, forms the single thickness side walls 12 and end walls 13 of the completed carton 10, and its width is therefore equal to the height of the completed carton. Lateral scores 14 across the strip divide it into side wall forming panels 12' and end wall forming panels 13' and facilitate bending to form the corners 15 at the junctures of the side and end walls of the assembled carton. A short tab 16, projects from one end of the strip 11 and is adapted to be secured to the other end 17 of the strip, thus in effect providing the carton with a continuous wall about its perimeter.

A pair of flaps 18 and 18' extend from each side of each of the two end wall forming panels 13' of the strip 11. These flaps 18 and 18' preferably extend laterally from the strip 11 a distance substantially equal to half the length of the carton, although they may be made shorter if desired. The width of each pair of flaps 18 and 18', measured along the strip 11, is equal to the width of the complete carton 10. The inner edge of each of the flaps is defined by a score 19 which concurrently defines an edge of the end wall forming panel 13' from which the flaps project. The score 19 enables the flaps 18 and 18' to be bent inwardly at right angles to the end walls of the carton 13 (see Figure 3) so that these flaps may form the inner course or layer of a double thickness top wall 7 and bottom wall 8 of the carton.

The two flaps 18 and 18' of each pair are spaced apart a small distance, forming between them a slot 20 extending outwardly from the edge of the strip 11, at right angles thereto. The width of this slot is preferably equal to about four times the thickness of the material of which the blank is formed.

A larger flap 21 extends from each side of each of the two side wall forming panels 12' of the strip 11. The inner edge of each flap 21 is defined by a score 22 which concurrently defines an edge of the side wall panel 12' from which the flap projects. The width of each of the flaps 21 measured along the strip 11 is equal to the length of the carton.

Each of the flaps 21 has an intermediate score 23 parallel to the score 22 and at a distance outwardly therefrom substantially equal to half the width of the carton. The scores 22 and 23 of each flap 21 define between them the panels 24 and 24'. When the carton is assembled these panels are bent inwardly along the score 22, at right angles to the side wall panels 12', so that panels 24 will overlie flaps 18 and panels 24' will overlie flaps 18' to form the outer layer or course of the double thickness top wall 7 and bottom wall 8 of the carton.

The portion 25 of each flap 21 which is outward of the score 23 is bent along the score 23 to be perpendicular to the outer cover forming panels 24 and 24', and when the panels 24 and 24' are bent into position the portions 25 of each flap 21 pass inward through the spaces or slots 20 between the inner layer cover flaps 18 and 18' so that the four surfaces of the flap portions 25 are adjacent to one another along the center line

26 of the carton, where they form a pair of adjacent vertical dividing partitions 27. The slots 20 must thus be equal in width to four times the thickness of the material from which the blank is fabricated, so that they will accommodate the four superimposed flap portions 25 which form the partitions 27.

A slot 29, parallel to the strip 11 and of a size and shape to conveniently accommodate the hand, is cut in the outermost portion 25 of each of the flaps 21, and the outer edge of each flap 21 is provided with the general contour of a handle. A third or outermost score 30 on each of the flaps 21 is parallel to the outer two scores thereon (22 and 23) and defines the inner edge of the outermost portion 28 of the flap. When the carton is severed by making a vertical cut through each of the end walls 13 thereof along a line 31 connecting the slits 20 and between the two partitions, the outward portions 25 of the flaps 21 form the tops of the two resulting half-carton containers and the handle shaped outermost portions 28 on these flaps may be bent outwardly along the score 30 to provide a pair of handles whereby each carton may be conveniently carried.

In assembling the carton, right angle bends are first made along each of the scores 14 across the strip 11. The tab 16 is then in a position adjacent to the opposite end 17 of the strip 11, to which it may be secured in any suitable manner as, for example, by means of glue or staples. At this point the partially assembled carton will have the appearance of a rectangular tube with flaps 18, 18' and 21 extending from each end thereof. Each of the flaps 18 and 18' is next bent inwardly along the score 19 at right angles to the end wall 13 from which it extends. The flaps 18 and 18' thus form the inner course or layer of the double thickness top wall 7 and bottom wall 8.

The outer portions 25 of the flaps 21 are bent inwardly at right angles to the inner panels 24 and 24' along the scores 23. Each entire flap 21 is then bent inwardly along the score 22 and the outer portion 25 thereof is passed through the slits 20 between the flaps 18 and 18' to permit the cover panels 24 and 24' to be folded perpendicular to the side wall 12. The cover panels 24 will thus overlie the flaps 18 at the top and bottom of the carton.

The inner surfaces of the panels 24 and 24' are preferably secured to the outer surfaces of flaps 18 and 18', respectively, by means of glue or staples. However, if it is desired to leave the carton in a condition such that the top thereof may be readily opened, only the flaps which form the two layers of the bottom wall 8 of the carton need be so secured to one another. It will then require a slight effort to dislodge the outer portions 25 of the flaps 21, which form the outer layer of the top wall 7, so that the contents of the carton will be reasonably secure against spilling, although the top may be opened when desired by simply unfolding the panels 24 and 24' along the scores 22, drawing upward the outer portions 25 of the flaps 21 in so doing. If desired, gummed tape may be put along the corner formed by the marginal edges of the end walls 13' and the panels 24 and 24', thus sealing the top of the carton in place but permitting it to be readily opened.

It will thus be seen that the complete carton has single thickness side walls 12 and end walls 13 and a double thickness top wall 7 and bottom

wall 8, while each of the adjacent central partitions 27 formed by the cooperating outward portions 25 of the flaps 21 is two layers thick.

It will be understood that this invention also lends itself to the construction of a divisible carton in which each of the partitions is only one layer thick. This may be accomplished by making the outward portion 25 of one flap 21 extending from each of the side wall panels 12' slightly longer than the height of the carton, and forming this flap with a straight, rather than a handle-shaped outer edge. The flap 21 extending from the other marginal edge of the side wall would not have an outer portion 25. The outermost portion of the longer flap would then be bent outwardly, at right angles to the partition forming portion thereof, to be secured along the under surface of the flaps 18 or 18' which are adjacent to the side wall from which it extends. It will, of course, be understood that the individual containers resulting from the division of such a carton will not be provided with handles.

To divide the carton of this invention it is necessary only to make a single vertical cut through each of the end walls 13 along the line 31 which joins the two slots 20. This may be very conveniently accomplished by inserting a knife blade between the two adjacent central partitions 27 and slicing outwardly and downwardly. Preferably a dotted line or some similar device is printed or embossed on the end walls of the carton to indicate the lines 31 along which the dividing cuts are to be made.

It will be readily seen that severing the carton along the lines 31 will provide two complete containers each having half the capacity of the undivided carton. The top 32 of each of these containers is formed from the outer portion 25 of the flaps 21, which formed one of the two adjacent partitions in the undivided carton. The side walls 12 of the undivided carton form the bottoms of the half carton containers, while half of the top wall 7 and the corresponding half of the bottom wall 8 of the undivided carton become the side walls of each half carton container.

When the carton has been divided, the handle-shaped outermost portions 23 of the flaps 21 may be bent outwardly along the scores 30 to provide a pair of handles whereby each half-carton container may be conveniently carried.

If it is desired to make the carton of this invention divisible into two containers of unequal size, this may be readily accomplished by making one of the inner layer flaps 18 of each pair wider than the other flap 18', and by making the outer cover panels 24 which extend from one of the side walls 12 proportionately wider than the panels 24' extending from the other side wall. It is thus entirely practicable to produce, for example, a carton having a capacity of twelve cans which could be divided into two smaller containers, one having a capacity of eight cans and the other four cans. To accomplish this, flaps 18' would be made twice as wide as flaps 18 and panels 24' would likewise be made twice as wide as panels 24. A carton so designed would, of course, be assembled in the same manner as a carton divisible into two equal containers and the partitions in such a carton would be located to one side thereof one-third of the width of the carton from one of the side walls, rather than along the center line of the carton.

From the foregoing description taken in connection with the accompanying drawings, it will be readily apparent that this invention provides

a divisible carton formed from a single sheet blank which may be divided by merely making a single vertical cut through each of the end walls of the carton thus providing two smaller containers which will have handles parallel to their longer dimension whereby they may be conveniently carried.

What I claim as my invention is:

1. A carton of the type formed from a single sheet blank and adapted to be readily divided to provide two complete half-carton containers, characterized by: flaps, each comprising an inner panel extending horizontally inwardly from the top and bottom of each of a pair of opposite side walls of the carton substantially to the center thereof, and an outer portion bent perpendicularly inwardly substantially along the center line of the carton to be parallel to said side walls with the vertical portions of the flaps so bent substantially equal in height to the height of said side walls and positioned adjacent to one another to form a pair of adjacent longitudinal partitions through the center of the carton and integral therewith, and available, when the carton is divided by making a vertical cut through each of the two end walls between said partitions, to provide tops for the two half carton containers so formed, said inwardly bent portions of said flaps having their outermost edge portions shaped and slotted to form a pair of handles which may be bent outwardly from the top of each of the containers so formed, parallel to the longer dimension thereof, to enable the same to be conveniently carried.

2. A carton of the type having side and end walls and adapted to be readily divided to provide two half-carton containers, characterized by: top and bottom wall forming panels extending from the side walls of the carton in perpendicular relationship thereto toward a plane intermediate said side walls and parallel thereto; partitions at opposite sides of said plane and substantially parallel thereto, said partitions comprising partition forming members extending perpendicularly inwardly from each of said top and bottom wall forming panels said partitions having a height substantially equal to the height of the side walls and being available, when the carton is divided by making a vertical cut through each of the two end walls along said plane and between said partitions, to form the tops of the resulting half-carton containers; and handle means on said partitions parallel to the longer dimension of each container whereby said containers may be conveniently carried.

3. A carton, formed from a single sheet blank and adapted to be readily cut to provide two individual containers each having half the capacity of the complete carton, comprising: single thickness side walls; single thickness end walls; double thickness top and bottom walls perpendicular to the side and end walls, the inner course of said double thickness walls comprising a pair of adjacent flaps bent inwardly from each of said end walls with their adjacent edges spaced apart a small distance and disposed at opposite sides of a plane midway between and parallel to the side walls of the carton, and the outer course of said double thickness top and bottom walls comprising single panels bent inwardly from each side wall; and a pair of adjacent partitions alongside and parallel to said plane and comprising extensions of said single panels bent inwardly and passed edgewise through the spaces between the adjacent edges of said pairs of flaps, said

extensions having a width substantially equal to that of the side and end walls and having their surfaces overlying one another so as to be available to form a double thickness wall for each of the half-carton containers obtained by cutting vertically through each end wall of the complete carton between said adjacent partitions along said plane.

4. A carton adapted to be readily cut to provide two complete smaller containers, said carton being formed from a single sheet blank and comprising: single thickness side walls; single thickness end walls joined to said side walls; double thickness top and bottom walls, the inner course of said double thickness walls comprising a pair of adjacent flaps bent inwardly from each of said end walls with their adjacent edges spaced apart a small distance, and the outer course of said double thickness top and bottom walls comprising single panels bent inwardly from each side wall; and a pair of partitions in the carton substantially parallel to said side walls and comprising extensions of said single panels bent inwardly and passed edgewise through the spaces between the adjacent edges of said pairs of flaps, said extensions on the single panels having sufficient width to overlie one another and to overlap so as to be available to serve as walls of smaller containers formed by cutting vertically through each end wall of the complete carton between said partitions; and handle means on said partitions parallel to the longer dimension of each container whereby said containers may be conveniently carried.

5. A blank for a divisible carton adapted to be readily severed to provide two individual containers, each having less capacity than the complete carton, said blank having slits and scores defining: an elongated rectangular strip extending medially through the entire length of said blank, said strip being equal in width to the height of the carton and having spaced transverse score lines dividing the strip into connected panels which provide single thickness end and side walls of the carton; pairs of adjacent flaps extending laterally from opposite longitudinal edges of said strip at the end wall forming panels thereof, said flaps extending outwardly from said edges of the strip a distance substantially equal to half the length of the carton, the two flaps of each pair having their adjacent side edges slightly spaced from one another, said flaps forming inner layers of the top and bottom walls of the carton when bent at right angles to the end wall forming panels of said strip on score lines defining the marginal edges of said end wall forming panels; larger single flaps on the opposite marginal edges of said strip at the side wall forming panels thereof and extending along the entire length of said side panels, each of said larger flaps having a scored juncture with the adjacent edge of its side wall panel and having a score line extending transversely thereacross parallel to said juncture but spaced outwardly therefrom a distance equal to substantially half the length of the end wall forming panels to enable said larger flaps to be bent to dispose their inner panels, lying between said score lines of said flaps, at right angles to the side wall panels and to enable the outer sections of the flaps on each side wall panel to be bent at right angles to their inner panels to dispose said outer sections in overlapping relationship and parallel to their respective side wall panels, with the overlapped outer sections of the larger flaps passing through the spaces between the flaps of

each first named pair to form separate and adjacent longitudinal partitions extending centrally through the carton and with the inner panels of said larger flaps providing outer layers overlying the first named flaps, each of said outer sections extending outwardly a distance substantially equal to the width of the medial strip and being adapted to cooperate with the outer section of the opposite flap to form the top wall of a separate container when a transverse cut is made centrally across the end wall forming panels to divide the carton into two individual and complete containers; and means on the outer sections of the larger flaps defining handle portions by which the individual containers which may be formed from the blank may be conveniently carried.

6. A single sheet blank for a divisible carton having a pair of adjacent vertical partitions extending through its longitudinal center, and forming, when a vertical slice is made through the center of each of its end walls, a pair of complete half-carton containers, each having a pair of longitudinal handles, said blank comprising: A strip defined by slits and scores in said blank extending medially through the length of the blank, said strip being equal in width to the height of the carton and having spaced apart transverse scores defining connected panels which provide single thickness side and end walls for the carton, one end of said strip being extended to form a tab adapted to be secured to the other end thereof upon folding the strip at right angles along each of said scores; a pair of flaps extending laterally from each side of the medial strip at both of its end wall forming panels, the two flaps of each pair defining between them a slit perpendicular to the marginal edges of said panels, the inner edges of said flaps, adjacent to the medial strip, being defined by scores which also define the marginal edges of said end wall panels; and larger flaps extending from each side of each of the side wall forming panels of the strip, said larger flaps having an innermost score defining the juncture of their inner edge with the marginal edge of said side wall forming panels and an intermediate score parallel to said innermost score at a distance outwardly therefrom substantially equal to half the width of the carton, said flaps also having an outermost portion, substantially equal in width to the width of the side wall forming panels and having its outer marginal edge portion shaped to form a handle, the inner edge of said outermost portion being defined by a third score parallel to said intermediate score and spaced therefrom.

7. In a divisible carton of the character described formed from a single sheet blank having alternated side and end wall panels folded and connected together in peripheral wall arrangement, the combination of: a pair of flaps on the top and bottom of each end wall, said flaps being folded inwardly perpendicular to the walls from which they extend and each pair thereof having their adjacent side edges in contiguous relationship and defining narrow slots between them all of which lie in a common plane parallel to the side walls of the carton; top and bottom walls for the carton comprising panels extending from the side walls having complementary portions substantially meeting along said plane and overlying said flaps; partition forming tabs on said top and bottom wall forming panels bent inwardly into the container and passed through said slots defined by the contiguous edges of the

flaps to be frictionally held thereby and to provide a pair of adjacent partitions, said tabs being of sufficient width to overlap one another and to provide walls substantially closing the sixth side of each of the two smaller containers produced by cutting the end walls of the carton along said plane; and handle forming means on said tabs adapted to be folded outwardly from said sixth wall of the smaller containers to provide a pair of cooperating handles for each of said containers.

8. The carton structure of claim 7 wherein said first-named flaps have substantial length to pre-

clude displacement thereof when the carton is divided to produce smaller containers.

EARL F. JOHNSON.

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