This invention relates to shipping and carrying cartons and more particularly to cartons designed to provide sealed merchandise shipping cases having a separable carrying handle which may be pulled out from the end wall of the carton and which is additionally provided with a separable hinged cover part associated therewith which may be conveniently opened for removal of the merchandise contents.

This invention is directed to the provision of improved merchandise shipping and carrying cartons within which a selected number of cans, bottles, jars or wrapped packages of merchandise may be packed and the carton then sealed to serve as a strong and sturdy shipping case for transportation from the merchandise manufacturer or distributor to the retailer for direct sale to the consumer or merchandises user. These cartons feature a reinforced carrying handle formed as an integral part of one of the end walls of the shipping case which may be easily pulled out from the end wall to provide convenient means by which the consumer or user may hand transport the filled carton. The shipping case is additionally provided with a separable cover part interal therewith and designed to be readily opened by the consumer or merchant to provide convenient access to the merchandise contents.

These improved shipping and carrying cartons are formed from one-piece blanks of cardboard, fibreboard, or other fibrous stock sheet materials of requisite strength and thickness. The stock sheet need not be finished and imprinted on one side thereof only and the carton forming blanks may be fully cut and scored ready for assembly into cartons in a single pass of the stock sheet through a cutting and scoring machine with very little waste of stock sheet material resulting.

The blanks are cut and scored in a manner to form six walled cartons, with one end wall which has the handle part associated therewith of substantially double-ply thickness. The carton is initially assembled in collapsed form for shipment and storage in limited space and presents a tubular body forming four walls of the carton with closure flaps extending from the ends of the tubular body forming walls which may be assembled in overlapped relation to provide the other wall walls of the carton. The collapsed tubular body shell is readily expandable into rectangular form, permitting machine insertion of the merchandise items into the rectangular shell through the open ends thereof, following which the closure flaps may be closed and sealed to form the fifth and sixth walls of the packaged carton.

In one form of this invention, the body shell is formed by foldably connected side and end wall panels, with the top and bottom walls formed by closure flaps extending from the side and end walls. After infloding the bottom and top flaps and securing the same together to provide a solid bottom wall, the merchandise items may be machine loaded through the open top thereof and the top wall forming flaps then sealed and closed to provide a sealed shipping case in which the merchandise items contained therein are fully protected.

In another form of this invention, the tubular body shell is formed by foldably connected top, bottom and end wall panels which may be machine loaded through the open sides of the expanded shell. The side wall closure flaps extending from the top, bottom and end wall panels may then be infolded and secured together in overlapped relation to provide solid side walls and a sealed shipping case in which the merchandise items are fully protected during shipment.

In still further form of this invention, the tubular body shell is formed by enclosing top, bottom and side wall panels into which the merchandise items may be machine loaded through the open ends thereof. The end wall forming flaps extending from the top, bottom and side wall panels are then infolded and secured together in overlapped relation to provide solid end walls and a sealed carton in which the merchandise items are fully protected.

In still further forms of this invention, at least one of the end walls is formed by over-lapping sections adhesively sealed together to provide an end wall whose mid-sectional area extending between the adjacent side walls has a thickness not less than two thicknesses of the sheet material from which the carton is formed. This substantially double-ply end wall is provided with a pair of spaced lines of weakness which are substantially parallel to each other and equally spaced between the top and bottom walls and which also extend for a short distance into the side walls of the sealed carton. The stock sheet material which is between the spaced lines of weakness defines a double-ply handle strap which can be pulled out of the plane of the end wall with which it is associated to provide a convenient carrying handle integrally connected to the side walls of the carton.

These improved cartons are also provided with a separable cover part which provides convenient customer access to the merchandise contents. The cover part is formed by a top panel section integrally connected to a pair of side flange sections and a front flange section. The side flange sections of the cover part are captured from the side walls of the sealed carton and are separable therefrom along lines of weakness which extend diagonally across the end of the carton side walls. The front flange section of the cover part is captured from the end wall with which the handle part is associated.

The top panel section of the cover part is captured from the top wall of the sealed carton and is integrally hinged to a permanent section of the carton top wall by a transversely extending score. Thus the side flange sections and front flange section of the cover part are integral with the side walls and handle providing end wall of the sealed carton, but are separable therefrom along breakable lines of weakness.

When the double-ply handle strap is pulled out from the end wall of the sealed carton with which it is associated, the front flange section of the cover part is thereby automatically loosened from the carton end wall so that the cover part may be flung into open position by applying an upward pulling force on to the front flange section of the cover part which thereby separates the side flange sections of the cover part from the permanent side wall sections of the carton along lines of weakness provided in the side walls. The top panel section of the cover part may have an area approximately equal to one-third to one-half of the entire top wall area of the sealed carton so that when the cover part is swung into open position, an opening of substantial area will have been provided for the convenient removal of the merchandise contents.
Shipping and carrying cartons made in accordance with this invention are particularly adapted for the shipment and retail sale of various merchandise material contained in cans, jars, bottles and individual packets which are packed in these cartons in numbers suitable for advantageous purchase by the consumer without further segregation of the merchandise items contained therein for separate sale, and within the limits of convenient carryable weight. For example, food and beverage products normally packaged in shipping cases containing twenty-four merchandise items, and thus too heavy for convenient hand transportation by the customer, may be packed in groups of six, eight, ten, or twelve merchandise items in cartons constructed in accordance with this invention and thereafter conveniently hand transported by the customer by means of the pull-out reinforced handle strap associated therewith. Improved cartons made in accordance with this invention are thus designed to perform the plural purposes of a shipping case in which the merchandise items are protected from damage and contamination during shipment, a display carton which is adapted to be attractively arranged and displayed in the retail store, and a consumer transportation carton in which the merchandise may be conveniently hand transported by the customer from the retail establishment.

Other objects and advantages of this invention will become apparent as disclosure proceeds.

Although the characteristic features of this invention will be particularly pointed out in the following description, it is to be understood that such features are not to be limited to the invention as expressly described, but to any changes in the form of apparatus or in the arrangement of the parts that would be apparent to one skilled in the art without departing from the spirit of this invention. The applicant has chosen not to claim the obvious modifications of the invention that would appear after completion of the second and final folding operation and wherein the hinged cover section thereof has been swung into open position to permit convenient removal of the can contents.

Fig. 1 is a plan view of a prepared blank which has been cut and scored in accordance with this invention to provide a display carton designed for filling through the top thereof and which is equipped with a pull-out handle part and an openable hinged cover part;

Fig. 2 is a plan view of the blank shown in Fig. 1 as it would appear after execution of the first folding operation and with adhesive has been applied to the overfolded end flap extension thereof;

Fig. 3 is a plan view of the blank as it would appear after execution of the second and final folding operation to produce a carton shell in collapsed form;

Fig. 4 is a perspective view of the carton as it would appear when the bottom-forming flaps have been infolded and secured together and the carton filled with cans through the open top thereof;

Fig. 5 is a perspective view of the carton after the top wall-forming flaps have been closed and sealed to provide a sealed shipping case;

Fig. 6 is a perspective view of the packaged carton as it would appear after the double-ply handle part has been pulled out of the end wall with which it is associated to provide a convenient handle by which the filled carton may be hand transported, and

Fig. 7 is a perspective view of the carton as it would appear after the hinged cover part thereof has been swung into open position to provide convenient access to the contents.

Fig. 8 is a plan view of a modified form of blank which has been cut and scored to provide a carton carton designed to be filled through the open sides thereof and when filled and closed, to provide a carton having a double-ply pull-out handle strap associated with one of the end walls thereof and an openable cover part for contents access;

Fig. 9 is a plan view of the blank shown in Fig. 8 as it would appear after completion of the first folding operation and after adhesive has been applied to one of the end wall sections thereof;

Fig. 10 is a plan view of the blank shown in Fig. 9 as it would appear after completion of the second and final folding operation and wherein the paired end wall sections have been secured together in overlapped relationship to provide a carton shell in collapsed form;

Fig. 11 is a perspective view of the carton shell as it would appear after expansion thereof to provide a tubular body defined by the foldably connected top panel, bottom panel, and end panels as formed when the end wall sections are secured together, this view showing cans inserted into the tubular body and the side wall forming flaps in extended position;

Fig. 12 is a perspective view of the blank shown in Fig. 11 as it would appear after the double wall forming flaps extending from the end walls have been inturned and adhesive has been applied to the end wall forming flaps extending from the top and bottom panels thereof;

Fig. 13 is a perspective view of the fully closed and sealed carrier carton formed from the blank shown in Fig. 8;

Fig. 14 is a perspective view of the carrier carton shown in Fig. 13 as it would appear after the double-ply handle strap has been pulled out from the end wall with which it is associated to provide a convenient carrying handle, and

Fig. 15 is a perspective view of the carrier carton shown in Fig. 14 as it would appear after the hinged cover part thereof has been swung into open position to permit convenient removal of the can contents.

Fig. 16 is a plan view of another modified form of blank which has been cut and scored to provide a can carrier carton designed to be filled through the open ends thereof and when filled and closed, to provide a carrier carton having a double-ply pull-out handle forming strap associated with one of the end walls thereof and an openable cover part for contents access;

Fig. 17 is a plan view of the blank shown in Fig. 16 as it would appear after completion of the first folding operation and after adhesive has been applied to the overfolded securing flap thereof;

Fig. 18 is a plan view of the blank shown in Fig. 17 as it would appear after completion of the second and final folding operation to produce a carrier shell in collapsed form;

Fig. 19 is a perspective view of the can carrier shell shown in Fig. 18 as it would appear after expansion thereof to produce a tubular body defined by the foldably connected top, bottom, and side panels, this view showing the side wall forming flaps in extended position preparatory to insertion of the cans through the open ends of the shell;

Fig. 20 is a perspective view of the can carton shown in Fig. 19 as it would appear after the cans have been inserted into the body thereof, this view showing the end flaps which extend from the side panels in inturned position, with adhesive applied to the end flaps which extend from the ends of the bottom panel;

Fig. 21 is a perspective view of the can shell as it would appear after the end flaps which extend from the bottom panel have been folded into adhesively secured relation to the adjacent inturned end flaps extending from the side panels, with adhesive applied to the inside face of the end flaps extending from the top panel;

Fig. 22 is a perspective view of the fully closed and sealed carrier carton as formed from the blank shown in Fig. 16;

Fig. 23 is a perspective view of the carrier carton shown in Fig. 22 as it would appear after the double-ply handle strap has been pulled out from the end wall with which it is associated to provide a convenient carrying handle, and

Fig. 24 is a perspective view of the carrier carton shown in Fig. 22 as it would appear after the hinged cover section thereof has been swung into open position to permit convenient removal of the can contents.
Similar reference characters refer to similar parts throughout the several views of the drawings and specifications.

The top filled carton shown in Figs. 4, 5, 6 and 7 may be assembled from a blank which is imprinted on one side thereof only and which is cut and scored as shown in Fig. 1. This blank presents an end wall panel 1 intergrally hinged as by parallel extending transverse scores 11 to a pair of opposite side panels 2-2', and an end panel forming section 3 intergrally hinged as by a transverse score 12 to the side panel 2, and an end panel reinforcing flaps 3' extending transversely of the top wall flaps 6-6 and which together define portions 6' of the adjacent side wall panels 2'. The bottom flaps of the carton are formed by four flaps which comprise a pair of bottom side flaps 4-4' foldably connected to the side wall panels 2-2', a pair of bottom end flaps 5-5' foldably connected to the end panel 1 and the end panel section 3 by aligned longitudinally extending scores 15 to 15'. The longitudinally extending scores 14 to 14' may be slightly offset with respect to the longitudinal scores 15 to 15' to facilitate assembly of the carton. The adjacent ends of the bottom end flaps 5-5' are separated by a transverse cut 11' which is substantially in alignment with the transverse score 11', the adjacent ends of the bottoms of the carton 5-4' are separated by a transverse cut 11'' which is substantially in alignment with the transverse score 11, and the adjacent ends of the bottom flaps 4-5' are separated by a transverse cut 12'' which is substantially in alignment with the transverse score 12.

The top wall of the carton is formed by a pair of top side flaps 6-6' foldably connected to the side panels 2-2' along aligned longitudinal scores 16 to 16', and by a pair of top end flaps 7-7' foldably connected to the end panel 1 and end panel section 3 along aligned longitudinal scores 17 to 17'. The aligned scores 16 to 16' may be slightly offset with respect to the aligned scores 15 to 15' to facilitate assembly of the carton. The adjacent ends of the top flaps 7-6' are separated by a transverse cut 11'' which is substantially in alignment with the transverse score 11', the adjacent ends of the top flaps 7-6' are separated by a transverse cut 11' which is substantially in alignment with the transverse score 11, and the adjacent ends of the top flaps 6-7' are separated by a transverse cut 12'' which is substantially in alignment with the transverse score 12.

It will be noted that the blank shown in Fig. 1 is substantially rectangular in outline except for the end flap section 3 which is integrally hinged to the pair of top side flaps 6-6' along the transverse score 12'. The end flap section 3 is desirably substantially the same in size and area as the end panel section 3, so that when the sections 3 and 3 are secured together in overlapped relationship, a substantially doubly ended wall is formed thereby.

The handle part H for the carton formed from the blank shown in Fig. 1 comprises a strap portion 10 defined between a pair of spaced lines of weakness 18 to 18' extending longitudinally of the end panel section 3 for the full length thereof and which also extend into the adjacent side panel 2 for a limited distance. The spaced lines of weakness 18 to 18' are defined between a pair of spaced lines of weakness 19 and 19 which terminate in the side wall panel 2 may be joined by transverse score 20 to thereby define a root portion 10' for the handle strap portion 10 as defined between the weakened lines 18 to 19. A similar handle strap portion 10' for the other handle is defined between a pair of spaced lines of weakness 19 to 19' extending longitudinally of the end wall flaps 3' and into the adjacent side panel 2' for a limited distance, the terminal ends of the weakened lines 18 to 19 being joined by a transverse bending score 20'. The handle part C for the carton formed from the blank shown in Fig. 1 is defined by a pair of hinge scores 16' extending transversely of the top wall flaps 6-6' and which together define portions 6' of the top panel section of the cover part. The side flange sections 8' of the cover part are captured from the side panels 2-2' and are separable therefrom along weakened lines 18 to 19' which extend into the side panels 2-2' and by the diagonally extending weakened lines 20' which extend from the adjacent terminal ends of the hinging scores 16' to the terminal ends of the adjacent longitudinally extending weakened line 18 to 19'.

The carton blank shown in Fig. 1 is assembled into a collapsed body shell by folding the side panel 2 along the transverse score 11' in overlying relation to the bottom panel 1. A patch 2 of adhesive may then be applied to the outside face of the inner end flap section 3' as shown in Fig. 2. The end panel section 3 may then be folded along the transverse score 12 into overlying relation to the glue coated face of the end flap section 3' to provide a collapsed body shell as shown in Fig. 3. These collapsed body shells may be vertically stacked and shipped and stored in limited space.

When merchandise articles M such as a series of cans are to be packed in the carton, the collapsed body shell shown in Fig. 3 is expanded into rectangular form, the bottom side flaps 6-6' are inturnded, adhesive is applied to the inside faces of the bottom end flaps 5-5' and the bottom end flaps 5-5' are then inturnded and pressed into adhesive securement with the previously inturnded bottom side flaps 4-4' to provide a strong and sturdy bottom wall for the carton as shown in Fig. 4. A selected number of merchandise items M may then be machine loaded through the open top of the carton as shown in Fig. 4. The top side flaps 6-6' may then be inturnded, adhesive applied to the inside face of the top end flaps 7-7', and the top end flaps 7-7' inturnded and pressed into adhesive securement with the inturnded top side flaps 6-6' to provide a strong top wall for the sealed carton as shown in Fig. 5.

It will be noted that the transverse hinging scores 16' define the cover panel portions 6'' of the top side flaps 6-6' are then in alignment, and are located directly adjacent the free edge of the inturnded top end flap 7. The panel portions 6'' as secured to the inside face of the top end flap 7 together form the top panel for the cover part C. The front flange section 8-8' of the cover part C, as formed by the overlapped flange forming portion 8-8' of the end wall sections 3-3', is of double-ply thickness and may be separated from the end wall sections 3-3' when the aligned weakened lines 18-18' are broken. The side flange section 8'' of the cover part are integrally hinged to the adjacent top panel portions 6' and the adjacent end flange portions 8-8', and may be separated from the side wall panels 2-2' by breaking the diagonally extending weakened lines 20'.

When the sealed carton as shown in Fig. 5 is to be hand transported, the aligned weakened lines 18-18' and 19-19' are broken so as to permit the handle part H as defined therebetween to be pulled out of the plane of the end wall. It will be noted that the handle part H as formed by the overlapped and adhesively bonded strap portions 10-10', is of double-thickness. The root portions 10' of the handle part are designed to become inwardly inclined when the handle part H is pulled out, with the root portions 10' braced by the adjacent cans or articles M packed in the carton.

The lower edge of the cover front flange is readily accessible when the aligned weakened lines 18-18' have been broken. By exerting an upward pull on the free lower edge of the cover front flange 10' as formed by the overlapped end flanges 8-8', the diagonally extending weakened lines 20' formed in the side panels 2-2' may be readily broken, and the cover part then swung into open position along the aligned hinging scores 16' as shown in Fig. 7.

The side loaded carton shown in Figs. 11 to 15 inclusive may be assembled from a blank which is imprinted on one side thereof only and which is cut and scored as
shown in Fig. 8. This blank presents an end panel 21 integrally hinged as by parallel extending transverse scores 31—33' to an adjacent top wall panel 22 and an adjacent bottom wall panel 22'. The second end panel section of the carton is formed by a pair of end panel forming sections 23—23' integrally hinged as by transverse scores 32—32' to the adjacent top wall panel 22 and the adjacent bottom wall panel 22' respectively. The side walls for this carton are each formed by five overlapping flaps which include a side flap 25 integral hinged to each end of the end wall 21 by a longitudinally extending score 35, a side flap 24 integral hinged to each end of the top wall panel 22 along the longitudinally extending score 34, a side flap 24' integral hinged to each end of the bottom wall panel 22' along a longitudinally extending score 34', a side wall section 26 integral hinged to each end of the end wall section 23 along a longitudinally extending score 36, and a side wall section 26' integral hinged to each end of the other end wall section 23' along a longitudinally extending score 36'. The longitudinally extending scores 35, 36 and 36' along each side of the blank may be substantially in alignment with each other, but are preferably slightly offset with respect to the aligned longitudinal scores 34—34' to facilitate assembly of the carton.

The blank as shown in Fig. 8 is substantially rectangular in form and may be cut and scored with little resulting stock sheet waste. The side flaps 25 extending from the end wall panel 21 may be substantially rectangular in form, and the side flap sections 26 and 26' extending from the 'double-flap' root sections 23 and 23' may also be substantially rectangular in form, but may be separated by notch cut-outs 39 from the adjacent side end flaps 25 and 25' so that each end of the bottom end flaps 24' has a square cut edge 39' from which a diagonal edge 39' extends. The side flaps 24 associated with the top panel 22 may likewise be separated from the adjacent side flaps 25 and 25' by notch cut-outs 39 which define a square edge 39' joining a diagonal edge 39' at each end of the top end flaps 24.

The top panel section 22' of the cover part C is captured from the top panel 22 of the blank shown in Fig. 8 and is defined by a hinging score 32' which extends transversely of the top panel 22. The side flange sections 24' of the cover part are captured from the side flaps 24 and are separated therefrom by a diagonally extending weakened line 34' which extends from the free ends of the flaps 24 to the terminal ends of the hinging score 32'. The end wall panel 21 provides one end wall of the assembled carton, and the end wall sections 23—23' when overlapped and adhesively secured together, provide the other end wall of the assembled carton. Each of the end wall sections 23—23' has a full length strap forming portion 28—28' defined by a transversely extending weakened line 33—33' which extends full length of the wall sections 23—23'. The weakened line 33—33' is also in alignment with adjacent aligned cuts 33 extending into the side flap sections 26—26' to thereby provide root portions 28' for the strap portions 28—28'. Each of the root portions 23' may be integral hinged by longitudinal score 38—38' to a portion 29—29' of the side flap section 26—26'. The side flap sections 26 may also be provided with a diagonally extending weakened line 37' designed to coincide with the adjacent weakened line 34' formed in the adjacent side flap 24 when the carton is assembled, to thereby provide a reinforcing section 27' for each side flap section 24' of the cover part.

The blank shown in Fig. 8 may be assembled to provide a collapsed body shell by folding the bottom panel 22' along the transverse score 31' into overlying relation with respect to the end wall panel 21 and top wall panel 22 as shown in Fig. 9. A coating b of adhesive may then be applied over the entire inside area of the extended end wall section 23 and its associated side flaps 26. The end wall section 23 and its associated side flaps 26 is folded along the transverse score 32 into overlying and adhesively secured relation to the adjacent integral fold end wall section 33' and the associated side flaps 26' to thereby produce the collapsed body shell as shown in Fig. 10. When the end wall section 23 and its associated side flaps 26 have been infolded, the lower extended line 33 and the cut extend from the bottom of the weakened line 33' and aligned cuts 33' in the underlying end wall section 23' and associated end flaps 26'. A double-flap handle part H is thus formed by the adhesively bonded handle strap portions 28—28' and the adhesively bonded root portions 28'' at each end thereof. The collapsed body shell formed as shown in Fig. 10 may then be erected into rectangular form and the merchandise items inserted therein through the open sides thereof as shown in Fig. 11. Patches of adhesive e may be applied to the outside faces of both side end flaps 25 and to both side end flaps formed by the overlapped side flap sections 26—26' as shown in Fig. 12, and these side end flaps then interlocked as shown in Fig. 12. Patches of adhesive d may be applied to the inside faces of both bottom side flaps 24' and both top side flaps 24 as shown in Fig. 12 and these flaps then folded inwardly in superimposed relation to complete the side walls of the sealed carton as shown in Fig. 13.

It will be noted that the sealed carton as shown in Fig. 13 provides a double-flap handle strap H as formed by the overlapped handle forming portions 28—28' of the end wall sections 23—23'. It will be further noted that the handle strap also has double-flap sections 26—26' formed by the overlapped and adhesively secured root portions 28'' associated with the interlocked and overlapped side flaps 26—26' associated with the end wall sections 23—23'. By breaking the lines of weakness 33—33' in the overlapped end wall sections 23—23', the handle part H may be pulled outward from the blank as shown in Fig. 14 to provide a convenient carrying handle. When the handle part is thus pulled out, the double-flap root portions 28'' will then incline inwardly and be braced against the adjacent articles packed in the carton as shown in Fig. 14, with the double-flap root portions 28' integral with and extending along the transverse scores 24—24' of the cover part.

The cover part for the carton shown in Fig. 13 has its top wall section 22' taken from the top panel 22 and is hinged by the hinging score 32'. The side flanges of the cover part are formed by the side flap portion 29—29' taken from the side wall forming portions 24, and are separable therefrom along the lines of weakness 34'. The side cover flanges are additionally reinforced by the side flange portions 27' which overlap and are adhesively secured to the adjacent side flange portions 24'. The side cover flanges are releasable by breaking the diagonal lines of weakness 37 in the end flaps 26 which are in alignment with the adjacent lines of weakness 34'. Thus the side flanges of the cover part are strongly reinforced and possess substantial strength. The front flange 27 of the cover part is taken from the end wall section 23 and is releasable therefrom when the line of weakness 33 is broken. The front flange 27 is integrally connected at each end thereof to the side flange portions 27' to provide a cover front flange of substantial strength.

The lower edge of the cover front flange 27 is readily accessible when the weakened line 33 is broken. By covering an upward pull on the free lower edge of the cover front flange 27, the diagonally extending weakened lines 34' and 37 may be readily broken, and the cover part then swung into open position along the hinging score 32' as shown in Fig. 15.

The end loaded carton shown in Figs. 19 to 24 inclusive may be assembled from a blank which is imprinted on one side thereof only and which is cut and scored as
shown in Fig. 16. This blank presents a side wall panel 41, a top wall panel 42, a second side wall panel 41', and a bottom wall panel 42' foldably joined in side-by-side relationship by parallel extending folding scores 51. The bottom wall panel 42' has a securing flap 41'' hinged thereto as by a longitudinal score 51 which is designed to be adhesively secured to the inside face of the opposite side wall panel 41 adjacent the free edge thereof to provide a tubular carton body with opened ends.

One end wall of this carton is formed by a pair of end wall flaps 43-43' integrally hinged to the adjacent ends of the side panels 41-41' along aligned transverse scores 53-53', and by a pair of end wall flaps 44-44' integrally hinged to the adjacent ends of the top and bottom panels 42-42' along aligned transverse scores 54-54'. The aligned scores 54-54' are slightly offset with respect to the aligned transverse scores 53-53' to facilitate assembly of the end wall. The adjacent ends of the end wall forming flaps 43, 44, 43' and 44' are separated by longitudinal cuts 51 which are substantially in alignment with the adjacent longitudinal scores 51.

The other end wall of the carton assembled from the blank shown in Fig. 16, is also formed from four overlapping end flaps 45-45' and 46-46' which are scored and cut to also provide a handle part H as well as the front flange of the cover C for this carton. End flaps 45-45' are integrally hinged to the adjacent ends of the side wall panels 41-41' along aligned transverse scores 55-55', and the end flaps 46-46' are integrally hinged to the adjacent ends of the top and bottom panels 42-42' along aligned transverse scores 56-56'. The aligned transverse scores 55-55' are slightly offset with respect to the aligned transverse scores 56-56' to facilitate overlapping folding of the flaps 46-46' with respect to the flaps 45-45'. The adjacent side edges of the end flaps 45, 46, 45' and 46' are separated by longitudinal cuts 51 which are substantially in alignment with the adjacent longitudinal scores 51. The opposite side edge of the end flaps 45-45' may, however, present a square cut edge 57 and a diagonal edge 57' extending therefrom.

Each of the end wall flaps 46-46' which extend from the adjacent ends of the top and bottom panels 41-41' and 42-42', are provided with a transversely extending weakened line 58-58' which define strap forming portions 47-47'. The strap portions 47-47' are subsequently glued together in overlapped relationship to provide a plural-ple handle part. The end flaps 45-45' are also provided with a pair of extending weakened lines 59-59' and 59' and 60' which define therebetween a strap portion 47'' which is also incorporated into the handle part. Each of the strap portions 47'' has a root portion 48 associated therewith which extends into the adjacent ends of the side panels 41-41' and are hinged thereto by transverse scores 61 but otherwise separable therefrom along flared weakened lines 59' and 60'. The weakened lines 59' and 60' extend to the terminal ends of the transverse scores 61 and join the terminal ends of the adjacent weakened lines 59-60 and 59'-60'.

The end wall forming flaps 45-45' additionally provide a portion 49-49' designed to be adhesively secured to the inside face of the front flange portion 50 associated with the end flap 46 to provide a reinforced front flange for the cover part. The top panel section 42'' of the cover part is taken from the top panel 42 and is hinged by a longitudinally hinged score 52. The side flanges 41' of the cover part C are taken from the side panels 41-41' from which they are separated by the weakened lines 52' which extend diagonally across the side panels 41-41' from the terminal ends of the hinging score 52 into meeting relation with the terminal ends of the weakened lines 60'-60' of the front flange section 50 which are hinged to the cover panel section 42 along the scores 56, and the ends of the front flange section 50 are adhesively secured to the front
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11 economical in the use of paperboard, and may be shipped as flat collapsed shells in minimum space and conveniently stored until needed for packaging use. Cartons made in accordance with this invention may be loaded with the merchandise items by the use of available high speed loading machines, and may be loaded either through the open top wall, the open side walls or the open end walls thereof. The merchandise items are fully protected from dust and contamination during shipment and storage, and the sealed carton can not be opened and merchandise items pilfered therefrom, without leaving visible evidence of tampering.

The packaged cartons can be stacked in limited space, attractively displayed in the retail store, and are provided with a convenient handle part by which the carton may be hand transported by the purchasing customer. The carton is also additionally provided with a hinged cover part which provides convenient access to the contents. The cover part can be swung into closed position to protect the remaining merchandise items therein until fully consumed.

While certain novel features of this invention have been disclosed herein and are pointed out in the claims, it will be understood that various omissions, substitutions and changes may be made by those skilled in the art without departing from the spirit of this invention.

What is claimed is:

1. A carton formed from a one piece blank of sheet material and designed to provide a plural purpose shipping, hand transportation and dispensing carton for a group of cans packaged therein, said carton presenting a pair of said walls, a pair of end walls, a top wall and a bottom wall proportioned to receive a single layer can group therein with the top and bottom ends of the cans positioned adjacent the top and bottom walls of the carton, said end walls having a pair of substantially parallel and breakable weakened lines formed therein which define therebetween a pull-out handle part taken from and extending across the midsectional portion of the end wall, said carton having a breakout cover part designed to provide a can dispensing opening adjacent the handle part, said breakout cover part presenting a cover top section taken from the top wall of the carton and defined by a hinging score extending transversely across the carton top wall, said cover top section as defined by said transverse score having a longitudinal length which is less than half the longitudinal length of the top wall but not substantially less than the diameter of a single can, a front flange section comprising that portion of the end wall extending between the pull-out handle part and the top wall of the carton and separable from the pull-out handle part along the adjacent breakable weakened line and when broken defines the free edge of the front flange section and the adjacent edge of the handle part, and a pair of cover side flange sections taken from and separable from the carton side walls along breakable weakened lines extending between the terminal ends of said hinging score and the terminal ends of said adjacent weakened line extensions which define the adjacent edges of the top of the pull-out handle part, said cover part being openable by swinging the same along said top wall hinging score when the front flange section and side flange sections thereof are released from the handle part and the side walls of the carton along said breakable lines to thereby provide a can dispensing opening in the top wall of the carton adjacent the handle part.

2. A carton formed from a one piece blank of sheet material and designed to provide a plural purpose shipping, hand transportation and dispensing carton for a group of cans packaged therein, said carton presenting a pair of said walls, a pair of end walls, a top wall and a bottom wall proportioned to receive a single layer can group therein with the top and bottom ends of the cans positioned adjacent the top and bottom walls of the carton, one of said end walls having a pair of substantially parallel and breakable weakened lines formed therein which define therebetween a pull-out handle part taken from and extending across the midsectional portion of the end wall, said carton having a breakout cover part designed to provide a can dispensing opening adjacent the handle part, said breakout cover part presenting a cover top section taken from the top wall of the carton and defined by a hinging score extending transversely across the carton top wall, said cover top section as defined by said transverse score having a longitudinal length which is less than half the longitudinal length of the top wall but not substantially less than the diameter of a single can, a front flange section comprising that portion of the end wall extending between the pull-out handle part and the top wall of the carton and separable from the pull-out handle part along the adjacent breakable weakened line and when broken defines the free edge of the front flange section and the adjacent edge of the handle part, and a pair of cover side flange sections taken from and separable from the carton side walls along breakable weakened lines extending between the terminal ends of said hinging score and the terminal ends of said adjacent weakened line extensions which define the adjacent edges of the top of the pull-out handle part, said cover part being openable by swinging the same along said top wall hinging score when the front flange section and side flange sections thereof are released from the handle part and the side walls of the carton along said breakable lines to thereby provide a can dispensing opening in the top wall of the carton adjacent the handle part.
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pull-out handle part, said cover part being openable by swinging the same along said top wall hinging score when the front flange section and side flange sections thereof are released from the handle part, root portions and the side walls of the carton along said breakable lines whereby provide a can dispensing opening in the top wall of the carton adjacent the handle part.

4. A carton formed from a one piece blank of sheet material and designed to provide a plural purpose shipping, hand transportation and dispensing carton for a group of cans packaged therein, said carton presenting a pull-out handle part, a pair of end walls, a top wall and a bottom wall portions for the handle part, said root portions being taken from midsectional portions of said side walls and integrally connected to said end wall sections and to said cover part, a cover top section taken from the composite top wall of the carton and defined by a hinging score extending transversely across the carton top wall, said cover top section as defined by said transverse score having a longitudinal length which is less than half the longitudinal length of the composite top wall but not substantially less than the diameter of a single can, a front flange section comprising that portion of the composite end wall extending between the pull-out handle part and the composite top wall of the carton and separable from the pull-out handle part along the adjacent breakable weakened lines extending between the terminal ends of said hinging score and the terminal ends of the adjacent weakened line extensions which define the adjacent ends of the root portions of the composite side walls, said cover part being openable by swinging the same along said top wall hinging score when the front flange section and side flange sections thereof are released from the handle part, root portion and the side walls of the carton along said breakable lines to thereby provide a can dispensing opening in the top wall of the carton adjacent the handle part.

5. A carton formed from a one piece blank of sheet material and designed to provide a plural purpose shipping, hand transportation and dispensing carton for a group of cans packaged therein, said carton presenting a pull-out handle part, a pair of end walls, a top wall and a bottom wall portions for the handle part, said root portions being taken from midsectional portions of said side walls and integrally connected to said end wall sections and to said cover part, a cover top section taken from the composite top wall of the carton and defined by a hinging score extending transversely across the carton top wall, said cover top section as defined by said transverse score having a longitudinal length which is less than half the longitudinal length of the composite top wall but not substantially less than the diameter of a single can, a front flange section comprising that portion of the composite end wall extending between the pull-out handle part and the composite top wall of the carton and separable from the pull-out handle part along the adjacent breakable weakened lines extending between the terminal ends of said hinging score and the terminal ends of the adjacent weakened line extensions which define the adjacent ends of the root portions of the composite side walls, said cover part being openable by swinging the same along said top wall hinging score when the front flange section and side flange sections thereof are released from the handle part, root portion and the side walls of the carton along said breakable lines to thereby provide a can dispensing opening in the top wall of the carton adjacent the handle part.
out handle part along the adjacent breakable weakened line which when broken defines the free edge of the front flange section and the adjacent edge of the handle part, and a pair of cover side flange sections taken from and separable from the composite side walls along breakable weakened lines extending between the terminal ends of said hinging score and the terminal ends of the adjacent weakened line extensions which define the adjacent edges of the root portions of the pull-out handle part, said cover part being openable by swinging the same along said top wall hinging score when the front flange section and side flange sections thereof are released from the handle part, root portions and the side walls of the carton along said breakable lines to thereby provide a can dispensing opening in the top wall of the carton adjacent the handle part.

7. A carton formed from a one piece blank of sheet material and designed to provide a plural purpose shipping, hand transportation and dispensing carton for a group of cans packaged therein, said carton presenting a top wall panel, a bottom wall panel and a pair of side wall panels secured together along the side edges thereof to provide a tubular body, and a pair of composite end wall panels, said carton each formed by four flap sections securely joined together in overlapping relation and respectively integrally connected to the adjacent ends of said side panels, top panel and bottom panel, one of said composite end walls having a pair of substantially parallel and breakable weakened lines formed therein which define therebetween a plural-ply pull-out handle part taken from and extending across the midsectional portion of the composite end wall, said paired weakened lines extending into the adjacent ends of both side wall panels to define therebetween a pair of root portions for the handle part, said root portions being taken from midsectional portions of said side wall panels but integrally connected at the end thereof to the side wall panels of the carton, said carton having a break-out cover part designed to provide a can dispensing opening adjacent the handle part, said break-out cover part presenting a cover top section taken from the top wall panel of the carton and defined by a hinging score extending transversely across the carton top wall, said cover top section as defined by said transverse score having a longitudinal length which is less than half the longitudinal length of the top wall panel but substantially less than the diameter of a single can, a front flange section comprising that portion of the composite end wall extending between the pull-out handle part and the top wall panel of the carton and separable from the pull-out handle part along the adjacent breakable weakened line which when broken defines the free edge of the front flange section and the adjacent edge of the handle part, and a pair of cover side flange sections taken from and separable from the side wall panels along breakable weakened lines extending between the terminal ends of said hinging score and the terminal ends of the adjacent weakened line extensions which define the adjacent edges of the root portions of the pull-out handle part, said cover part being openable by swinging the same along said top wall hinging score when the front flange section and side flange sections thereof are released from the handle part, root portions and the side walls of the carton along said breakable lines to thereby provide a can dispensing opening in the top wall of the carton adjacent the handle part.

8. A one-piece blank of sheet material designed to provide a plural purpose can shipping, hand transportation and dispensing carton having a break-out handle part and an adjacent break-out cover part, said blank including an end wall section, a side wall panel, an end wall panel, a second side wall panel, and a reinforcing end wall section foldably connected in side-by-side relation by a series of parallel scores extending transversely of the blank, a pair of opposite top and bottom wall forming flaps foldably connected along longitudinally extending scores to each of said side panels, bottom panel, and one of said end wall sections, a pair of breakable weakened lines extending longitudinally of the midsectional portion of each of said end wall sections for the full length thereof and defining a handle forming strap portion therebetween, each pair of weakened lines presenting end extensions extending into the adjacent side wall panels and defining therebetween a rope handle strap portion, a hinging score extending transversely across each of the top wall forming flaps which together with the adjacent top wall flap extending from one of said end wall sections presenting a composite cover top section whose longitudinal length is less than half the longitudinal length of the composite top wall but not substantially less than the diameter of a single can, and a weakened line extending diagonally across the adjacent corner portion of each of said side panels from the terminal end of the adjacent hinging score to the terminal end of the adjacent weakened line extension therein to thereby define a cover side flange taken from the side wall panel.

9. A one-piece blank of sheet material designed to provide a plural purpose can shipping, hand transportation and dispensing carton having a break-out handle part and an adjacent break-out cover part, said blank including an end wall section, a side wall panel, an end wall panel, and both end wall sections, each of said end wall sections having a breakable weakened line extending medially and transversely thereof whose ends extend into the side wall forming flaps which are integrally hinged thereto, each of said weakened lines defining a handle strap portion and a pair of associated handle root portions, a hinging score extending transversely of said top panel and defining a cover top section whose longitudinal length as defined by said transverse hinging score is less than half of the longitudinal length of the top panel but not substantially less than the diameter of a single can, a pair of breakable weakened lines extending from the terminal ends of said hinging score diagonally across a corner portion of the side wall forming flaps which are hinged to said top panel to thereby define the side flanges of the cover part.

10. A one-piece blank of sheet material designed to provide a plural purpose can shipping, hand transportation and dispensing carton having a break-out handle part and an adjacent break-out cover part, said blank including a side wall panel, a top wall panel, and a second side wall panel, and a bottom wall panel secured together in side-by-side relationship by a series of parallel scores extending transversely of the blank, end wall forming flaps integrally hinged along longitudinally extending scores to both ends of said top wall panel, bottom wall panel, and both of said end wall panels and designed to be secured together in overlapped relation to provide a pair of composite end walls for the carton, the end wall flaps associated with said top and bottom panels at one end thereof each having a longitudinally extending weakened line defining a handle strap portion, a pair of weakened lines extending transversely of each of the adjacent end wall forming flaps which are hinged to the adjacent ends of the side wall panels defining a further handle strap portion therebetween, said paired weakened lines having weakened line extensions extending into the adjacent end of each of said side panels defining root portions for the handle strap portions therebetween, a hinging score extending longitudinally across said top panel defining a cover top section whose longitudinal length as defined by said hinging score is less than half the longitudinal length of the top panel but not substantially
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tially less than the diameter of a single can, and a line of weakness extending from each terminal end of said hinging score to the terminal end of the adjacent weakened line extension in the adjacent side panel to define a side flange for the cover part.

References Cited in the file of this patent

<table>
<thead>
<tr>
<th>Patent Number</th>
<th>Inventor(s)</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,974,792</td>
<td>Berney</td>
<td>Sept. 25, 1934</td>
</tr>
<tr>
<td>2,359,298</td>
<td>Brogden</td>
<td>Oct. 3, 1944</td>
</tr>
<tr>
<td>2,361,597</td>
<td>Buttery</td>
<td>Oct. 31, 1944</td>
</tr>
<tr>
<td>2,598,051</td>
<td>Guyer</td>
<td>May 27, 1952</td>
</tr>
<tr>
<td>2,662,684</td>
<td>Robins</td>
<td>Dec. 15, 1953</td>
</tr>
<tr>
<td>2,681,143</td>
<td>Guyer</td>
<td>June 15, 1954</td>
</tr>
<tr>
<td>2,718,301</td>
<td>Palmer</td>
<td>Sept. 20, 1955</td>
</tr>
<tr>
<td>2,723,027</td>
<td>Guyer</td>
<td>Nov. 8, 1955</td>
</tr>
</tbody>
</table>