This invention relates to a paper carton and method of making the same and refers more particularly to a one-piece portable carrier for beverage-containing bottles and to the construction of the blank for forming the same.

The main object is to provide a comparatively inexpensive paper or cardboard carton which, when not in use, may be folded flatwise into a relatively small compact space and readily unfolded and adjusted for use for the reception of the bottles to enable the latter to be stored or carried from place to place with a minimum liability of breakage of the bottles.

Another object is to provide the bottom of the carton with an upright extension adapted to extend across and closely adjacent the inner face of one side of the tubular body of the carton and to provide the upper ends of said extension and opposite side of the tubular body with cover flaps having handles by which the carton may be carried and thereby to establish a connection between the handles and bottom of the carton to better resist the weight of the filled bottles resting upon said bottom when the carton is carried from place to place.

Another object is to arrange the handles of the cover flaps so as to interlock one with the other when the upper ends of said flaps are brought together for holding them in their closed positions and also to afford a rounding gripping surface on the lower side of the handle for convenience of carrying the carton.

A further object is to provide the upright extension with inwardly projecting partitions arranged in uniformly spaced relation to each other and to the opposite upright edges of the carton to form a series of compartments for the reception of the bottles and prevention of their contact one with the other and thereby to reduce the liability of breakage of the bottles in storage or transportation.

Other objects and uses relating to specific parts of the carton and blank for forming the same will be brought out in the following description.

In the drawings:

Figure 1 is a perspective view of my improved carton adjusted for use.

Figure 2 is a reduced perspective view of the carton as folded into relatively flat compact space when not in use.

Figure 5 is a plan of the blank for forming the carton, also on a reduced scale.

Figure 6 is a perspective view of a slightly modified form of my invention.

Figure 7 is an enlarged transverse sectional view taken in the plane of line 7—7, Figure 6.

Figure 8 is a plan of the blank for forming the carton shown in Figure 6.

As illustrated, the carton comprises a substantially rectangular tubular body 1 adapted to stand in an upright position and preferably elongated laterally in one direction to form opposite relatively broad flat upright sides 2 and 2' and narrower upright sides 3 and 3'.

The lower end of the tubular body 1 is normally closed by a bottom wall 4 which is integrally united at 5 to the lower end of one of the flat sides as 2 of the tubular body and has its opposite edge provided with an upwardly projecting extension 6 integrally united thereto at 5' and adapted to closely engage the inner face of the upright side 2' of the tubular body 1, as shown more clearly in Figures 2 and 3.

This extension 6 is practicably co-extensive with the upright side 2' of the tubular body but is unattached thereto for purposes hereinafter explained, said extension being provided with a plurality of, in this instance two, upright partitions 7 preferably integrally united thereto and adapted to project inwardly therefrom in parallel spaced relation uniform distances apart from each other and from the upright side walls 3 and 3' to form a series of, in this instance three, compartments 8 for receiving the bottles as a and holding the latter out of contact with each other to reduce the liability of breakage.

The junctions or folding lines 5 and 5' between the bottom 4 and upright side 2 and extension 6 are preferably scored as indicated in the blank, Figure 5, to facilitate the folding operation without liability of breaking the fabric and also to assure the folding at right-angles to the sides of the tubular body, it being understood that the bottom portion 4 is of substantially the same cross-sectional area as that of the interior of said tubular body.

The partitions 7 are of similar length but considerably less than that of the extension 6 and are preferably located near the bottom portion 4 so as to leave considerable space above the partitions to facilitate the entry of the bottles as a between them from the top downwardly until the bottles rest upon the bottom 4, as shown by dotted lines in Figure 2.
The partitions 1 are integrally united at 9 to the extension 8 and are adapted to extend therefrom across the major portion of the interior width of the tubular body 1, said wings being formed by cutting through the blank along three sides of each wing, as shown at 10 in Figure 5, in which the junctions of the inner edges of the wings with the blank are shown by dotted score lines representing the junctions of the wings with said extension, it being understood that the folding lines 8 of the wings are parallel with each other so that when the latter are folded inwardly they will be disposed in parallel planes at right angles to the extension.

The junctions of the upright sides 3 and 3' with the broader upright side 2 are scored along parallel lines 11, Figure 5, and in like manner the junction of the narrower upright side 3 with the broader side 2 is scored along the line 12, Figure 5, to facilitate the folding and unfolding of the sides of the tubular body.

The portion of the blank forming the side 2' of the tubular body is provided with a relatively narrow lengthwise adhesive flap 13 scored at 14 along its junction with the part of the blank adapted to be adhesively secured to the inner face of the upright side 3' of the tubular body to complete the tube.

The upper ends of the side member 2 and extension 6 are provided with similar cover flaps 15 and 15' having handle flaps 16 and 16' cut therefrom to form hand holes or openings 17 and 17'.

The cover flaps 15 and 15' extend upwardly equal distances beyond their respective hand openings 17 and 17' and are scored transversely at their junctions with their respective handle flaps 16 and 16' as indicated by dotted lines 19 and 19', Figure 5, to form portions 20 and 20' of the cover flaps 15 and 15' respectively.

The lower and upper ends of the narrower upright sides 3 and 3' of the tubular body are provided with similar relatively short extension tabs 21 integrally united thereto and scored along their junctions with their respective sides 3 and 3' as indicated by dotted lines 22, Figure 5, to enable said extension tabs to be folded inwardly at right angles to said sides.

These tabs are of substantially the same width and length as the width of the interior of the tubular body 1 across the narrower portion thereof except that the outer corners thereof are cut away diagonally at 23 to facilitate the inward bending thereof between the opposite broader upright sides of the tubular body, it being understood that the tabs 21 will be separated by a slit 24 from the adjacent portions of the bottom 4 and cover flap 16' to enable them to be folded inwardly along their respective score lines 22.

The handle flaps 16 and 16' are somewhat similar except that the flap 16' is provided with relatively short end extensions 17' for interlocking engagement with the end walls of the opening 17 in the flap 16' when the flap 16' is inserted through the opening 17.

When forming the carton from the blank shown in Figure 6, the partition 8 and its extension flaps 21 will be folded along the score line 11 after which the side portion 3 with its end flaps 21 will be similarly folded along its junction line 11 to a position at right-angles with the side 2 in the same direction as the previously folded side 2'.

The side portion 2' will then be folded along the score line 12 to a position parallel with the side 2 after which the adhesive flap 13 will be folded inside of and against the previously folded side 2' and adhesively secured thereto, thus completing the tubular body, following which the extension tabs 21 adjacent the bottom portion 4 will be folded inwardly at right angles to their respective sides 3 and 3'.

The free end of the extension 6 will then be inserted into the interior of the tubular body along and closely adjacent the inner face of the side 2' of said tubular body and across the adjacent edges of the then inwardly folded extension tabs 21 until the bottom portion 4 rests against the lower faces of the extension tabs at right angles to the sides 2 and 2', thus closing the open lower end of the tubular body and together with the extension tabs 21 forming the cover flap 15' to extend above the tubular body in opposed relation to the cover flap 16 on the upper end of the side portion 2.

When the extension 16 is adjusted in the manner just described and is desired to place the bottles a therein, the partition flaps 7 may be unfolded inwardly at right angles to the extension 6 to form the compartments 3 into which the bottles a may then be placed from the top downwardly.

The extension tabs 21 adjacent the upper cover flap 15 may then be folded inwardly in right angles to the adjacent sides 3 and 3' ready for closing the cover flaps 15 and 15'.

The upper ends of the cover flaps are then brought together and the handle flaps 16' are then inserted through the opening 17 of the cover flap 15 and folded upwardly to form a rounded hand-engaging surface m, thereby causing the end flaps 17' of the handle flap 16' to engage the outer surface of the cover flap 15 to hold both flaps in an upwardly convergent tubular body and forming the handle flap 16' to fold upwardly against the inner face of the portion 20 of the cover flap 15' as shown more clearly in Figure 2.

The carton with the bottles or other articles therein may then be carried from place to place by one hand passing through the openings 17 and 17' and engaging the rounded surface m of the handle flap 15', thereby holding both cover flaps in their closed positions and transmitting the load of the bottles upon the bottom 4 to the side 2 and extension 6 to prevent accidental displacement of said bottom under load.

When the carton is not in use, the handle flap 16' may be unfolded and released from engagement with the cover flap 15 after which the partition flaps 7 may be folded flatwise against the inner face of the side 2' of the tubular body 1, thus permitting the bottom 4 and its extension 6 to be withdrawn downwardly from the interior of the tubular body.

The extension tabs 21 may then be unfolded and the tubular body collapsed flatwise along the score lines 11 and 12, thus permitting the extension 6 to be folded flatwise along the score line 3' upon the outer surface of the side 2' of the previously collapsed tubular body, as shown in Figure 4.
It is evident, however, that the tubular body may be folded flatwise in the opposite direction and the extension 6 folded flatwise upon the outer surface of the side 2' if desired.

It is now evident that when the carton is unfolded and adjusted for use with the bottles therein, the latter will be protected against contact one with the other by the interposed partitions 7, thus providing a convenient and safe means for conveying a plurality of bottles from one place to another without liability of breakage.

On the other hand, when the carton is not in use, a large number of them may be folded and stored in relatively small compact space, thus greatly reducing the cost of transportation.

The construction shown in Figures 6 to 8 inclusive is quite similar to that shown in Figures 1 to 5 inclusive except that it is adapted as a display stand for the bottle products and for this purpose the extension 6' corresponding to the extension 6, Figure 5, is provided with a medial score line as 6' midway between the score lines 6' and 18' to form adjacent panels 6' and 6'' so that when the blank is folded to form the carton, the parts 6' and 6'' will form one side of the box opposite the side 2, the folded position of the various parts of the carton being shown partially by full lines 6' and partially by dotted lines in Figure 7. The panel or portion 6'' is provided with integral folding partitions similar to but somewhat shorter than the partitions 7 in that they are arranged wholly between the score lines 5' and 18'', as shown more clearly in Figures 7 and 8.

Another difference of this construction over that shown in Figures 1 to 5 inclusive is that the extension or portion 7' of the blank for forming the inner portion of one of the upright sides of the carton is approximately one half the vertical height of that shown in Figures 1 to 5 inclusive so that when the various parts are folded to form the carton with the adhesive flap as 13' folded along the score line as 14' and adhesively secured to the opposite upright side as 3, it will leave an opening as 8 above the panel as 6'' of about one half the vertical height of the main body of the carton, as shown more clearly in Figures 6 and 7.

The outer edges of the opposite narrower upright sides 3 and 3' are provided with relatively narrow flanges 2'' of about the same vertical height as the portions 2' and, therefore, of about one half the vertical height of the upright side 2, said flanges being integrally united to their respective side portions 3 and 3' and adapted to fold inwardly toward each other along score lines 12', one of which forms a continuation of the score line 12, while the other forms a continuation of the outer edge of the part 4', as shown more clearly in Figures 6 and 8.

Aside from the structural differences pointed out, the construction shown in Figures 6 to 8 inclusive is similar to that shown in Figures 1 to 5 inclusive and the manner of folding the various parts to form the complete carton is also similar to that previously described.

For example, the parts 3 and 3' will first be folded in the same direction along the line 11' to positions at substantially right angles to the side portion 2 after which the portion 2' will be folded along the score line 12 and its adhesive portion 13' will be adhesively secured to the free edge of the portion 3' in overlapping relation thereto, thus holding the narrower side portions 3 and 3' in parallel relation to each other and to the upright side portion 2 with the flanges 2'' projecting inwardly toward each other, as shown in Figures 6 and 7.

The extension tabs 21 in alignment with the bottom portion 4 will then be folded inwardly at right angles to the corresponding portions 3 and 3', after which the free end of the extension 6 will be inserted from the bottom upwardly along the inner face of the side portion 2' and, if the carton is to be completed, the portion 6'' will be extended upwardly along the outer faces of the flanges 2'' as indicated by dotted lines in Figure 7, whereupon the upper ends of the opposite sides 2 and 2' will be interlocked with each other to form the handle in the manner previously explained in connection with the structure shown in Figures 1 to 5 inclusive.

On the other hand, if the carton is to be used for displaying the bottles as a contained therein, the panel portion 6'' will be folded outwardly and downwardly along the score line 18' and the portion 15 will be folded inwardly along the score line 18 after which the portion 20 on the outer end of the extension 6 will be inserted from the bottom upwardly across the lower edge of the portion 21 and between said sides 2 and the portions 6'', as shown in Figure 7, thus bringing the portion 15' at the bottom in a plane inclined upwardly and outwardly from the bottom 4 of the carton for holding the portion 4'' in an outwardly and downwardly inclined position.

Under these conditions the upper portions of the bottles a will be readily visible through the opening b while the panel 6'' may be used for advertising purposes.

Otherwise, the folding operation to form the carton is quite similar to that described for the construction shown in Figures 1 to 5 inclusive, it being understood that the partitions as 7' will have previously been unfolded inwardly at substantially right angles to the part 6'' to form the desired compartments for the reception of the bottles and for holding them in spaced relation against contact one with the other.

What I claim is:

1. A one-piece paper carton of rectangular cross-section comprising a bottom portion, side portions projecting upwardly from opposite edges of the bottom portion, cover flaps projecting upwardly from the upper edges of the side portions and provided with hand holes in opposed relation, and additional side portions projecting laterally from opposite upright edges of one of the first-named side portions, the other of the first-named side portions being scored transversely between its cover flap and the bottom portion to enable its upper portion with the cover flap thereon to be folded outwardly and downwardly to form a display opening for the contents of the carton.

2. A one-piece paper carton of rectangular cross-section comprising a bottom portion, side portions projecting upwardly from opposite edges of the bottom portion, cover flaps extending from the upper edges of the side portions, and additional side portions projecting laterally from opposite upright edges of one of the first-named side portions, the other of the first-named side portions being scored transversely between its cover flap and the bottom portion to enable its upper portion with the cover flap thereon to be
folded outwardly and downwardly to form a display opening for the contents of the carton.

3. A one-piece paper carton of rectangular cross-section comprising a bottom portion, side portions projecting upwardly from opposite edges of the bottom portion, cover flaps projecting upwardly from the upper edges of the side portions and provided with hand holes in opposed relation, and additional side portions projecting laterally from opposite upright edges of one of the first-named side portions, the other of the first-named side portions being scored transversely between its cover flap and the bottom portion to enable its upper portion with the cover flap thereon to be folded outwardly and downwardly to form a display opening for the contents of the carton, the lower portion of said last-named side portion having at least one inwardly folded partition adapted to extend longitudinally of and between the articles in the carton.

4. A one-piece paper carton of rectangular cross-section comprising a bottom portion, side portions projecting upward from the opposite edges of the bottom portion, flaps projecting upward from the upper edges of the side portions and provided with hand holes in opposed relation, handle flaps secured to the upper margins of said hand holes, one of said handle flaps being folded upward and lying between said first-mentioned flaps and the other of said handle flaps being folded upward and extending through the opposite hand hole.

5. A one-piece paper carton of rectangular cross-section comprising a bottom portion, side portions projecting upward from the opposite edges of the bottom portion, flaps projecting upward from the upper edges of the side portions and provided with hand holes in opposed relation, handle flaps secured to the upper margins of said hand holes, one of said handle flaps being folded upward and lying between said first-mentioned flaps and the other of said handle flaps being folded upward and extending through the opposite hand hole, said latter handle flap being provided with extensions along the sides thereof adapted to project into engaging and interlocking relationship with portions of the margins of said opposite hand hole.

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