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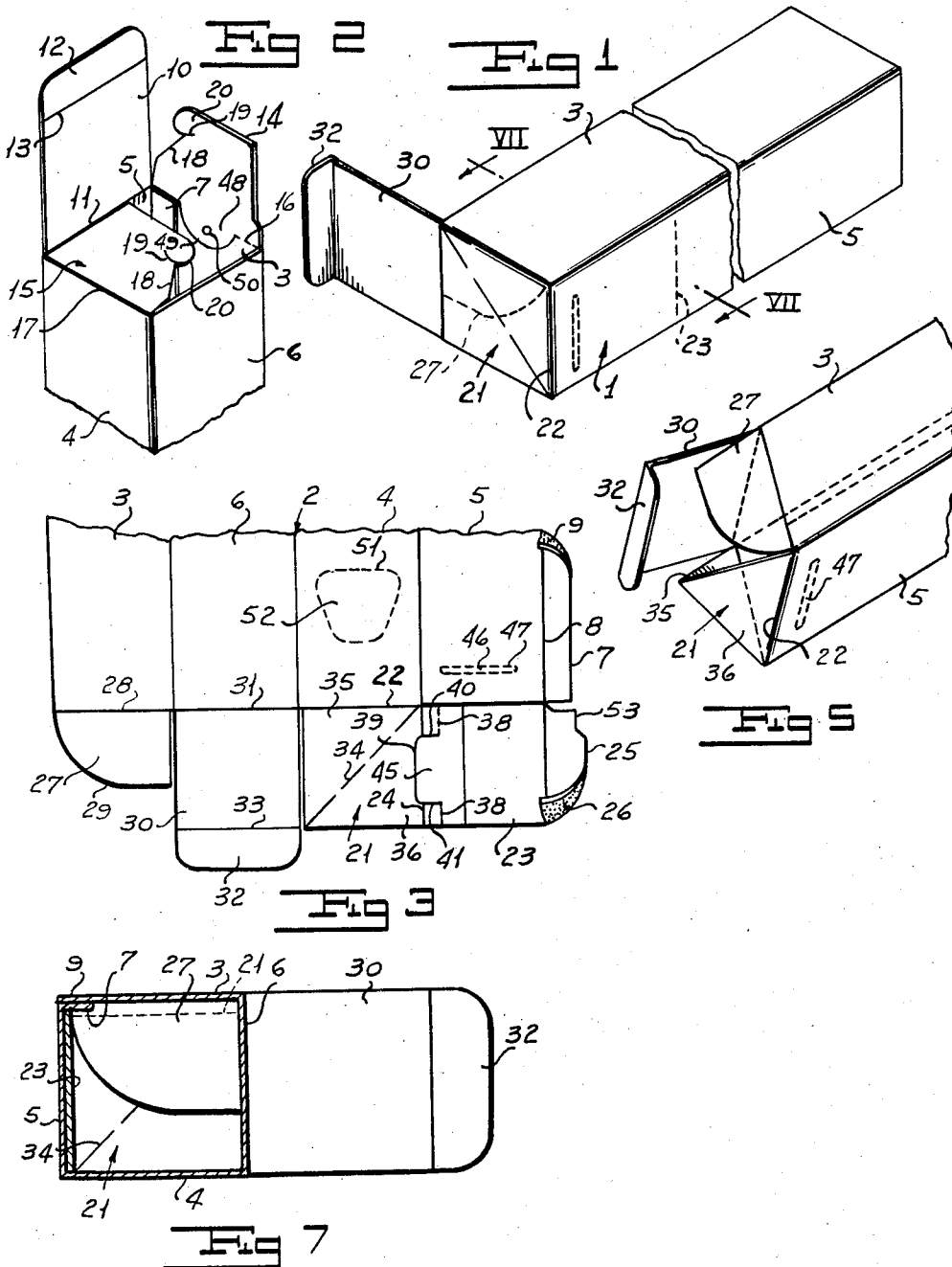
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COMBINATION PACKING, SHIPPING AND DISPENSING CARTON

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2 Sheets-Sheet 1



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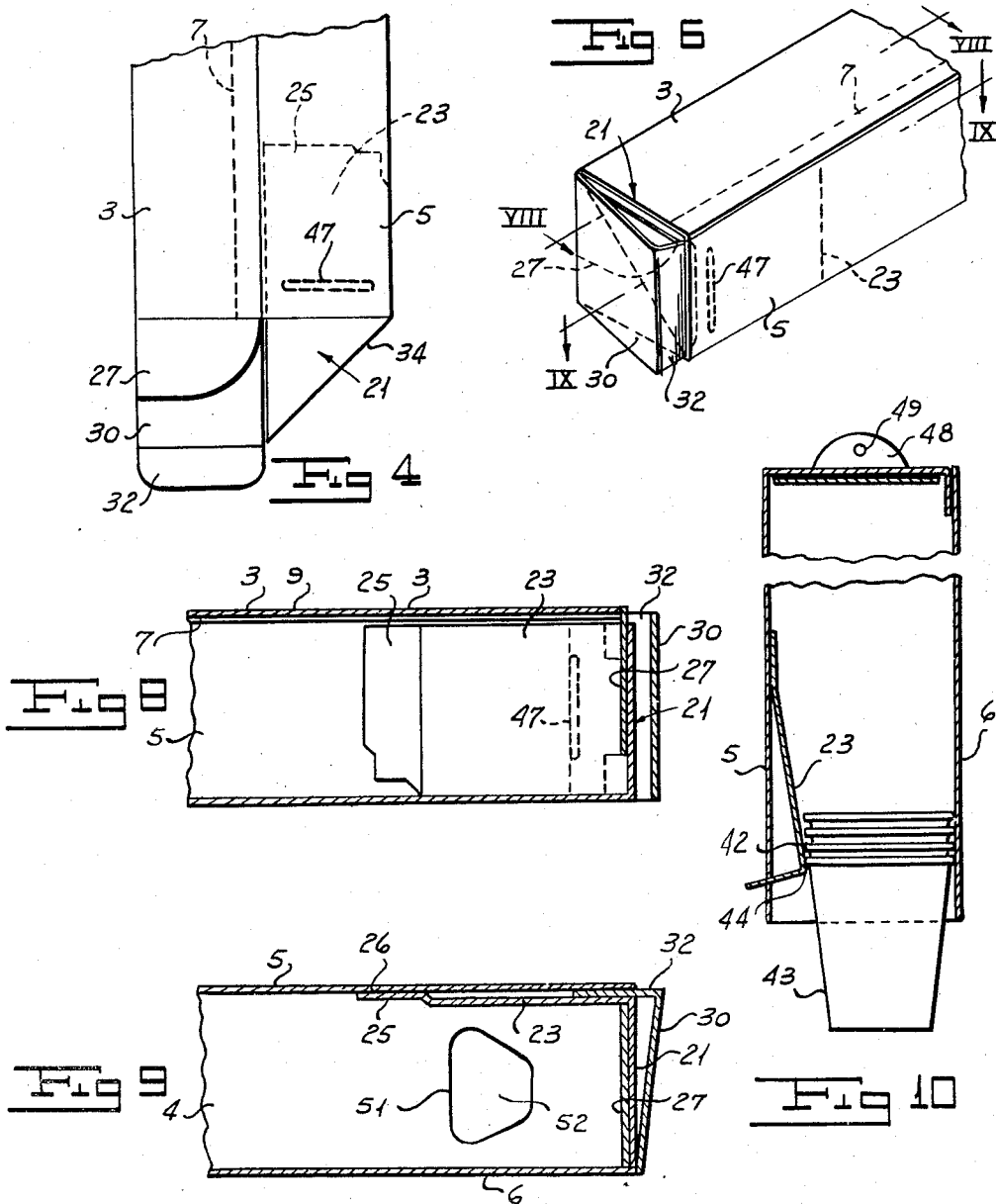
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COMBINATION PACKING, SHIPPING, AND DISPENSING CARTON

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5 Claims. (Cl. 221—305)

This invention relates to folding paper or cardboard cartons, and, more particularly, to such which are also adapted to function as dispensing devices for stacks of nested articles therein contained.

Up to the present time, it has been customary generally to ship paper drinking cups and other articles nested in the form of a stack in an ordinary type of cardboard shipping container or carton. When the cups are to be used, the stack is removed from the container and placed in a metal or glass dispenser. This necessarily requires that the user be supplied with such a dispenser, which is often inconvenient and expensive, particularly where large quantities of the articles are not used. In some cases, moreover, a particular type of dispenser will serve for only a particular type of cup. This means that once a consumer is supplied with such a dispenser, he is necessarily bound to buy the type of cup for which it is adapted or buy another dispenser.

It has been recognized that from the consumer's point of view it would be desirable to have a shipping container usable as a dispenser for the cups or other nested articles, so that they can be withdrawn one at a time from said container. A number of dispensers of this type have heretofore been suggested. For example, in one such dispenser a removable area is provided at the bottom of a shipping carton and the region around this area is so arranged that it lends a more or less yielding support to a stack of cups. In this type of dispensing carton, however, there is no certainty that the cups can be removed one at a time. Furthermore, such cartons are ordinarily made of flexible cardboard which has very little resistance against wear. Such cartons may be satisfactory in some instances where they do not contain very many cups, but as a general rule they leave much to be desired in dispensing a substantial number of cups.

One of the objects of the present invention is to provide a folding paper carton, desirably rectangular or approximately square in cross section when erected, and having a bottom construction which is not only strong and rigid, highly resistant to accidental opening and at the same time reinforces the carton as a whole, but which is adjustable to provide a retention element engageable by the lower one of a stack of nested articles to permit withdrawal of said articles one at a time.

Another object of the invention is to provide such a paper carton that can be initially folded into a flat condition and has a bottom flap which is of approximately the same shape and area as the bottom end of the carton, which is foldable diagonally, and which has an extension one end of which is foldably connected thereto, the other end of said extension being permanently secured to one wall of the carton intermediate the length of said wall, said extension being of a length substantially less than the length of said wall, whereby a minimum of material is required and the flap can be automatically extended, unfolded or erected across the carton as the carton is unfolded or set up, to provide a strong end closure for

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the carton, the end portion of said extension which is permanently secured to said one wall being separable from the diagonally foldable portion along an angular or zigzag line to provide a tab insertable in a slot in said wall to hold the body of said secured portion in a position spaced diagonally inward from the inner surface of said wall to function as a retention element for a stack of articles enclosed in said carton.

A further object of the invention is to provide a folding paper carton with a bottom construction which has a foldable flap and extension, as described in the preceding paragraph, and also has two other bottom flaps, one being hinged to another wall of the carton and adapted to be extended beneath said diagonally foldable flap when the carton is set up, and a third or closure flap being hinged to a third wall of the carton and including a tuck-in tongue to slip between said extension of the foldable flap and the wall to which said extension is secured.

A still further object of my invention is to provide a packing, shipping and dispensing device which may be shipped, from its place of manufacture to the place where its contents are supplied, in a flat folded state, thereby reducing shipping charges and enabling the manufacturer of the contents to sell the same cheaper than would be the case were the freight charges higher, as they would be were the device not capable of being shipped flat, said device being so constructed that the contents may be dispensed one at a time therefrom after adjustment of the closure means at one end thereof.

An additional object of the invention resides in providing square tubes with ends closable by flaps and provided intermediate the ends with an element which when the tube is used for mere packing and shipping lies flat against an inner side wall thereof, but when the tube is set up as a dispensing device, said element is adjustable to be held spaced diagonally from the inner side wall to which attached so as to function as a retention element engageable by the lower one of a stack of enclosed nested articles, permitting withdrawal of said articles from said stack one at a time.

These and other objects and advantages will become apparent from the following detailed description when taken with the accompanying drawings. It will be understood that the drawings are for purposes of illustration and do not define the scope or limits of the invention, reference being had for the latter purpose to the appended claims.

In the drawings, wherein like reference characters denote like parts in the several views:

Figure 1 is a fragmentary perspective view of a carton and dispenser embodying my invention, showing the bottom closure partially open.

Figure 2 is a fragmentary perspective view showing the top of the carton in partially open position.

Figure 3 is a fragmentary plan of a one-piece blank, cut and scored ready for folding to form a carton such as shown in Figures 1 and 2.

Figure 4 is a fragmentary side view of the carton in collapsed condition ready for shipment or storage.

Figure 5 is a fragmentary perspective view of the carton showing the bottom closure in a state of partial erection.

Figure 6 is a view similar to Figure 5, but showing the bottom closure in a nearly completed condition.

Figure 7 is a transverse sectional view on the line VII—VII of Figure 1, in the direction of the arrows, but showing the tuck-in flap extended.

Figure 8 is a fragmentary longitudinal sectional view on the line VIII—VIII of Figure 6, in the direction of the arrows.

Figure 9 is a fragmentary longitudinal sectional view

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taken at right angles to that of Figure 8, that is, on the line IX—IX of Figure 6, in the direction of the arrows.

Figure 10 is a sectional view of the device after being set up for dispensing paper cups therefrom, said section corresponding generally with that of Figure 9, except that it is from the opposite direction and after the retention element has been adjusted for holding a stack of nested paper cups, the other portions which initially provide a closure from one end of the carton having been removed.

In the present embodiment, there is disclosed an adaptation of the folding paper carton described and claimed in my application Serial No. 423,015, filed April 14, 1954, now abandoned, so that said carton may be used for dispensing articles contained therein one at a time, as well as for holding said articles during shipment or storage. However, it will be understood that my novel form of retention element for allowing withdrawal one at a time of articles from a stack enclosed in such a carton may be employed with cartons generally and is not restricted for use with the novel type of carton of said earlier application. Therefore, although the preferred embodiment here disclosed shows the modification of the carton of the preceding application for the present purpose, it will be understood that I am not limited to such showing.

Referring to the drawings in detail, and first considering the blank 2 illustrated in Figures 2 and 3, such a blank may be cut from fibrous material such as cardboard stock. It is preferably scored and bent so as to provide five panels articulated with respect to one another. This blank when set up to form a carton 1, has formed from such panels two pairs of opposite side walls 3 and 4, and 5 and 6, respectively, each wall being rectangular in shape so that the carton produced from the blank is straight sided. The side wall 5 has formed by the 5th panel a securing flap 7, foldably attached thereto along fold line 8. When the blank 2 is folded to produce a container, the flap 7 is secured to the inner surface of the side wall 3 by means of suitable adhesive which may be applied to the flap as indicated at 9.

The side walls 3, 4, 5 and 6 have foldable flaps or extensions at opposite ends thereof forming top and bottom closures for the erected carton. The top closure, as shown in Figure 2, comprises a preferably square flap 10 foldably attached to the side wall 5 along fold line 11 and terminating in a tuck-in tongue 12 articulated thereto at the fold line 13. A pair of locking flaps 14 and 15 are foldably attached to the top ends of walls 3 and 4, respectively, along fold lines 16 and 17, respectively. The free ends of the flaps 14 and 15 are cut away to provide inwardly sloping edges 18 terminating in transverse slots or slits 19 which define the inner ends of curved flexible projections 20, the outer edges of which merge into the outer or free edges of said flaps.

In accordance with the present invention, the carton 1 is formed with a novel self-erecting bottom closure. This bottom closure in blank form is shown in Figure 3 and includes a preferably square flap portion 21 foldably attached to the bottom end of the panel which is to form the side wall 4 along fold line 22. Flap 21 is formed with a lateral extension 23 articulately connected thereto along a fold line 24, and extending across the bottom of the panel which is to form the side wall 5. The extension 23 terminates in a securing flap 25, desirably relieved along diagonally angular or zigzag line 53 at its corner adjacent the flap 7, which flap 25 is provided with suitable adhesive on one surface thereof, as indicated at 26. The aggregate length of the extension 23 and its flap 25 is substantially less than the length of the panel which is to form the side wall 5. When the blank is folded, the extension 23 is positioned along the inner surface of the side wall 5 and secured thereto intermediate the length of the latter by the adhesive 26 on the flap or upper panel 25.

The extension 23 is separable from the square flap 21, as by being weakened or perforated along a zigzag line.

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Said line may comprise end portions 38 and an intermediate portion 39, (which may be entirely cut) joined at its ends to the end portions 38 along lines 40 and 41, respectively, which extend generally perpendicular thereto, as viewed most clearly in Figure 3, and may be cuts instead of mere weakenings or perforations. The purpose of this is to provide a retention element, generally designated 42 in Figure 10, from the body of the extension 23, to be engaged by and holding the lower one of a stack of cups or other similar nested articles 43, to allow withdrawal one at a time from said stack.

In order to provide for the production of such a retention element, the extension 23 is scored along fold line 44, so that when the carton is set up, not only may the extension 23 be bent along the line 44, to leave the body above and a lower panel below the fold line 44, but the tab 45 on the lower panel, defined by the weakenings or cuts at lines 40, 39, 41, and which is produced by separation from the flap 21 along those lines, is thereupon fitted into a slot 46. The slot 46 may be produced in the side wall 5 by removal of the part thereof defined by the line of perforation or weakening 47, indicated in dotted lines in Figures 1, 3, 5, 6 and 8. It will be seen that by virtue of the tab 45 being of less width than the extension 23, and therefore, of course, of less width than the panel which produces the side wall 5 of the carton, the slot 46 for receiving it, and which is of corresponding length, is provided at its ends with portions of the wall 5 against which the extension 23 abuts.

Thus, the body 42 of the extension 23 is, when forming a retention element, held in a position extending diagonally downward, as viewed in Figure 10, with its lower end spaced from the connected wall 5 so that it restricts the distance to the opposite wall 6, thereby jamming the stack of cups or other nested elements 43 between said body portion and the wall 6, preventing them from dropping out except as withdrawn one by one upon the user taking the lowermost one of the stack.

In addition to the bottom closure structure just described, there is a flap 27 attached to the bottom of the panel which is to form the side wall 3 along a fold line 28. Flap 27 is desirably shorter than the flap 21 and formed with a curved entrance edge 29. A desirably square flap 30 is foldably attached to the bottom of the panel which is to form the side wall 6 along a fold line 31, and terminates in a tuck-in tongue 32 articulated thereto along a fold line 33. The tuck-in tongue 32 is of such a length, less than the distance between the point of connection of the flap 25 to the side wall 5, and the lower edge of said side wall, that when closed it fits between the extension 23 and said side wall 5, as viewed in Figure 9. The flap 21 is also formed with a diagonal score line 34 dividing it into triangular portions 35 and 36, the score line being so positioned that said flap tends to bend or fold outwardly of the body of the carton when the side walls are collapsed, as shown in Figures 4 and 5.

With the carton side walls and top and bottom closure flaps folded and glued as above described, the carton is ready for shipment to the user. Such a carton can be shipped in a collapsed condition, as shown in Figure 4, thereby requiring a minimum of shipping and storage space and greatly facilitating the handling thereof. When it is desired to swing the carton from the collapsed condition of Figure 4 to its erected condition of Figure 1, a desirable procedure is to press inwardly on the opposite bottom corners of the collapsed carton, that is, those between the walls 3 and 6 on the one hand and 4 and 5 on the other, thereby swinging the side walls to slightly squared position as shown in Figure 5. At the same time, the flap 27 is pressed inwardly to guide it inside or underneath the triangular portions 35 and 36 of the flap 21. Continued pressure on the corners will fully square up the side walls and flatten out the triangular portions 35 and 36 across the bottom end of the carton.

The outermost flap 30 is then swung over the flap 21

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and its tongue 32 tucked in between the flap or extension 23 and the side wall 5, in frictional engagement with the inner surface of said side wall, thereby sealing the bottom end of the carton. In this way, the bottom end closure, consisting of three thicknesses of material, is produced with at least one edge of each thickness connected directly to a side wall, thereby greatly rigidifying the bottom closure. On account of the connection between the flap 25 and the side wall 5, there is not only a connection between the flap 21 along score line 22 but also between said flap 21 and the wall 5 along score line or lines 24. This means that the three thicknesses bottom closure has side wall support along all four sides and a collapse of the flap 21 along its diagonal line is inhibited by its being sandwiched between the flaps 27 and 30.

The top of the carton is readily closed by pressing the opposite top corners, that is, that between the walls 3 and 5 on the one hand and that between the walls 4 and 6 on the other, to flatten it slightly. The locking flaps 14 and 15 may then be pressed inwardly until the projections 20 thereof are in substantial alignment, after which the top of the carton is squared up again, thereby swinging said projections into interlocking relationship, with one locking flap fitting the slot or slit 19 of the other, and the flaps 14 and 15 to flat, closed position. The flap 10 is then swung over the flaps 14 and 15 and its tongue 12 pushed down along and between the inner surface of the wall 6 and the edges of the locking flaps, thereby closing and sealing the top of the carton. When the flap 10 is moved to open position, the locking flaps 14 and 15 may be disengaged from each other by movements reverse to those described in connection with the closing thereof.

When the carton containing a stack of paper cups or other stacked articles, such as pastry cones or cups for holding ice cream or other edible material, is received by the user, he may instead of emptying its contents in another receptacle, use the carton as a dispenser. For that purpose, the side wall 3 desirably has a hanging tab 48 cut therefrom along the curved line 49, but still connected to the tab 14 along the scored line 16. This tab may be bent outwardly 180° from the position shown in Figure 2, and its aperture 50 used to receive a nail or other device for holding it on a wall, even with the top members 10, 14 and 15 in the closed position.

In order to show when the carton is nearly empty, the wall 4, that is, the one opposite that from which the hanging tab 48 is cut, has a curved weakening or perforated line 51 facilitating the removal of a section 52 to form a window of comparable size through which the stack of cups or other devices may be viewed. As an alternative, such a window 52 may be initially cut from the carton, but, of course, that leaves an opening which might be undesirable from a standpoint of keeping the contents free from dust or other contamination, unless closed by a transparent sheet.

When the carton 1 is used as a dispenser, the flaps 21, 27 and 30 are torn off along the lines 22, 28 and 31, respectively, or otherwise removed, after of course separating the flap 21 from the extension 23 along the zigzag line 38, 39, 40, 41. The extension 23, connected to the wall 5 by the flap 25 and adhesive 26, is then bent inwardly to a tilted or diagonal position, as shown in Figure 10, and its lower portion bent outwardly along scored line 44, the tab 45 at the end being inserted in the slot 46, formed by removal of the material inside the dotted line 47, producing the retention element 42 viewed in Figure 10. The set-up there shown is then effective to allow for dispensing cups or other nested articles from the stack 43, one at a time, by a user grasping the bottom cup or article and pulling down on it, without, of course, squeezing it enough to pull other particles nested therewith out of the carton.

The carton requires minimum storage and shipping space, and after being folded and glued may be readily collapsed to a thin, flat, tube-like form, as shown in Fig-

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ure 4, which is easily handled and transported. Such a carton can be quickly erected or set up, for the insertion of its contents, and the structure is such that the carton blank can be made of thin cardboard and at the same time possess adequate strength to transport relatively heavy articles. It will also be understood that my carton may have the extra function of a dispensing container upon merely hanging up and removing the bottom closure structure, leaving, however, the portion which is glued to a side wall, which portion is then bent and with its lower tab inserted in a wall slot, as shown in Figure 10, to function as a retention element 42 for the cups or other devices stacked in the carton.

It will be understood, of course, that this retention element 42 is desirably formed initially integral with the blank from which the carton is made, but is otherwise independent of the specific type of carton except that such carton should have flat side walls and be generally rectangular in section when set up. However, the special retention element here disclosed and indicated at 42 in Figure 10 may be used, singly or in multiple, with cartons having no bottom closure, or with their bottoms entirely open as viewed in Figure 10. As an alternative, bottom closure means other than that previously described may be employed with a carton, while still using the novel retention element described.

Having now described my invention in detail in accordance with the patent statutes, those skilled in the art will have no difficulty in making changes and modifications in the individual parts or their relative assembly in order to meet specific requirements or conditions. Such changes and modifications may be made without departing from the scope and spirit of the invention, as set forth in the following claims.

I claim:

1. A combination folding carton and dispensing device comprising a cardboard blank cut, scored and folded to form a tubular body with four side walls articulated with respect to one another, one of said walls having a flap extending from the lower edge thereof, said flap having a lateral extension provided with a narrow flap at its free edge foldably connected thereto, said narrow flap being adhesively attached to the adjacent side wall, said extension being separable from the first mentioned flap along a line formed as portions at angles to one another to provide a tab at the free end of said extension after separation of the extension from the first-mentioned flap, the wall to which said narrow flap is attached having a slot to receive said tab after separation of said extension from the first-mentioned flap to hold the body of said extension spaced inwardly from the inner surface of said wall to function as a retention element.

2. A one-piece blank for forming a combination folding carton and dispensing device, said blank being scored longitudinally to form five panels, four of said panels being of generally uniform width and the fifth being narrower and carrying adhesive for connection with the panel at the other side of said blank after bending to square form, and a panel carrying at its lower end a square flap foldably attached thereto and formed with a lateral extension connected thereto along a fold line, said extension terminating in a securing flap carrying adhesive for connection to an intermediate portion of an adjacent panel, said extension being scored along its intermediate portion so that, after the securing flap is attached to said panel, it may be bent inwardly away from the inner surface of the panel to which attached, said extension being separable from its carrying flap along an angular line to provide a tab insertable in a slot in the panel to which the extension is connected.

3. A one-piece blank for forming a combination folding carton and dispensing device, said blank being scored longitudinally to form five panels, four of said panels being of generally uniform width and the fifth being narrower and carrying adhesive for connection with the pan-

el at the other side of said blank after bending to square form, the first panel at the side opposite the narrow panel carrying at its lower end a relatively short flap with a curved entrance edge, the second panel carrying at its lower end a square flap, the free end of which carries a tuck-in tongue, and the third panel carrying at its lower end a square flap foldably attached thereto and formed with a lateral extension connected thereto along a fold line, said extension terminating in a securing flap carrying adhesive for connection to an intermediate portion of the fourth panel, said extension being scored along its intermediate portion so that, after attachment of the securing flap to said fourth panel, it may be bent inwardly away from the inner surface of the panel to which attached, and said extension may be separated from its carrying flap along an angular line to provide a tab insertable in a slot in the panel to which the extension is connected.

4. A one-piece blank for forming a combination folding carton and dispensing device, said blank being scored longitudinally to form five panels, four of said panels being of generally uniform width and the fifth being narrower and carrying adhesive for connection with the panel at the other side of said blank after bending to square form, the first panel at the side opposite the narrow panel carrying at its lower end a relatively short flap with a curved entrance edge, the second panel carrying at its lower end a square flap, the free end of which carries a tuck-in tongue, the third panel carrying at its lower end a square flap foldably attached thereto and formed with a lateral extension connected thereto along a fold line, said extension terminating in a securing flap carrying adhesive for connection to an intermediate portion of the fourth panel, said extension being scored along its intermediate portion so that, after the securing flap is attached, it may be bent inwardly away from the inner surface of the panel to which attached, said extension being separable from its carrying flap along an angular line to provide after separation of said extension from said carrying flap a tab insertable in a slot in the panel to which the extension is connected, the other ends of said panels carrying locking flaps, and a square flap therebetween for folding over said locking flaps, when the carton is set up, and provided with a tuck-in tongue then insertable along the inner surface of the opposite side wall.

5. A combination folding carton and dispensing device comprising a cardboard blank, cut, scored and folded to form a tubular body with four side walls articulated with respect to one another, and top and bottom closure structures at opposite ends of said body, the bottom structure including a multiple-edged flap foldably attached to the bottom end of one of said side walls along one edge, an adjacent edge of said flap having an extension scored transversely to form a body portion and a narrow flap foldably connected to one end of said body portion and extending transversely of the extension, said narrow flap being adhesively attached to a second side wall adjacent the first-named wall, and the aggregate length of said extension and said narrow flap being substantially less than the length of said second wall, the remaining edges of said flap being unattached, said flap having a diagonal score line thereacross to facilitate folding thereof outwardly from the bottom ends of said side walls, there being provision for separation of said diagonally scored portion from said extension along a line having angularly related portions and said extension being scored transversely to provide a tab at the edge of said extension opposite said narrow flap after separation of said extension from said diagonally scored position, the wall to which said narrow flap is attached having a portion weakened to provide a slot to receive said tab after such separation of said extension from the diagonally scored portion to hold the body of said extension in a position spaced inwardly from the inner surface of said wall and inclined toward said bottom of the carton to function as a retention element, and two other flaps each foldably attached to the bottom end of one of the other side walls and positioned in juxtaposed relationship to said scored flap.

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