United States Patent [19]

Tyrseck

[11] **3,820,686**

[45] **June 28, 1974**

[54] **DISPENSER CARTON AND BLANK FOR FORMING SAME**

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[73] Assignee: **Robertson Paper Box Co., Inc.,** Montville, Conn.

[22] Filed: **Sept. 14, 1972**

[21] Appl. No.: **289,105**

[52] **U.S. Cl.** ..... **221/305,** 229/17 B, 229/39 B, 229/51 TS

[51] **Int. Cl.** **A47f 1/08,** B65d 5/72

[58] **Field of Search** ..... 221/310, 307, 305; 229/39 B, 17 B, 51 TS

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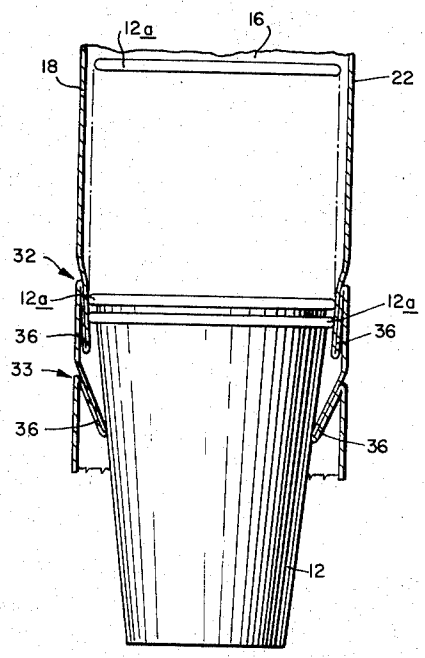
Assistant Examiner—Bruce H. Bernstein
Attorney, Agent, or Firm—Cesari and McKenna

[57] **ABSTRACT**

A carton for dispensing articles such as paper cups is formed from a single blank of material. The carton has four wall panels arranged to form a tube. One or more peripheral pleats are formed in the panels near one end of the carton so as to create resilient tabs which lay out away from the carton wall panels. These tabs resiliently engage the lowermost article in a stack of nested articles within the container so that the articles can be pulled one-by-one from the end of the carton.

5 Claims, 6 Drawing Figures



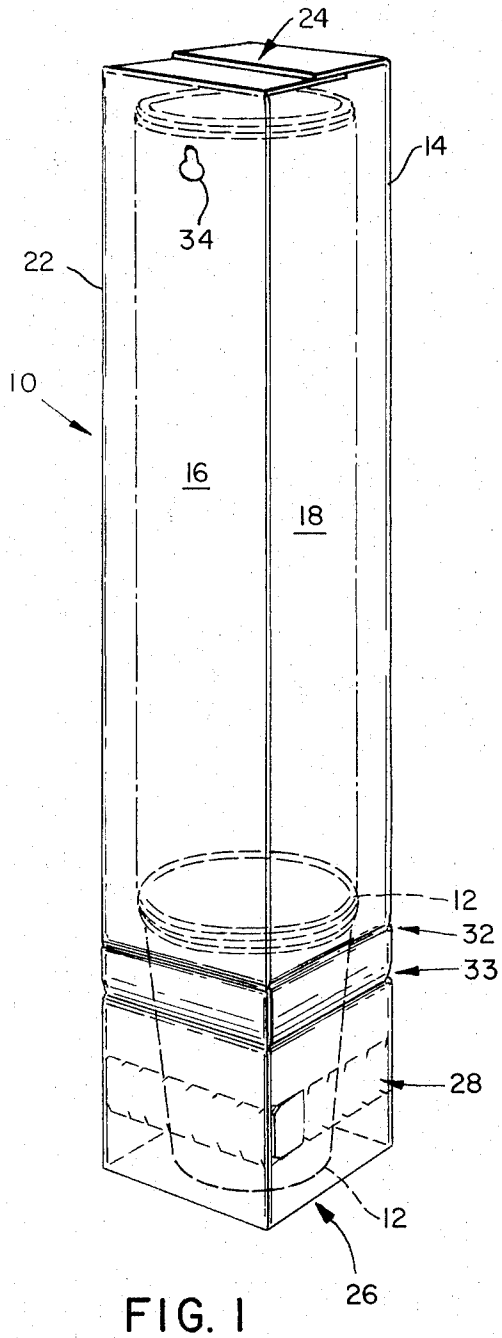


FIG. 1

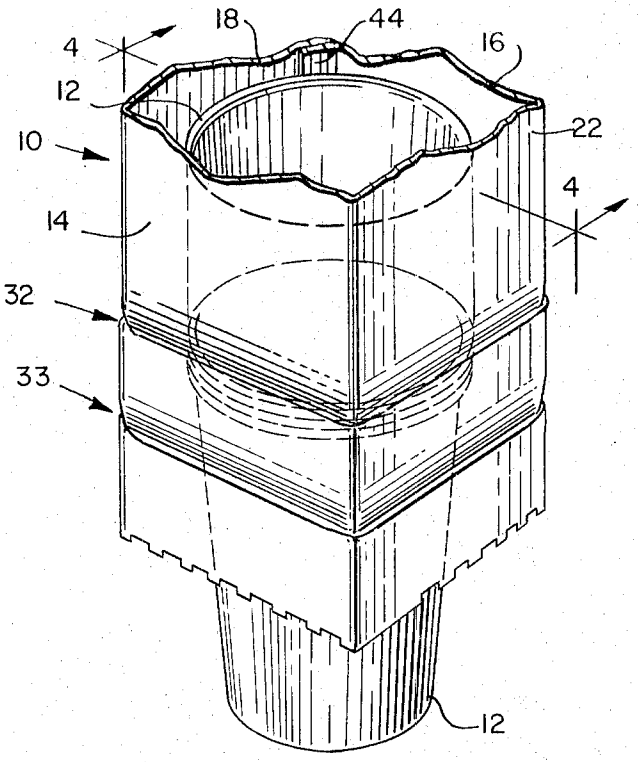


FIG. 2

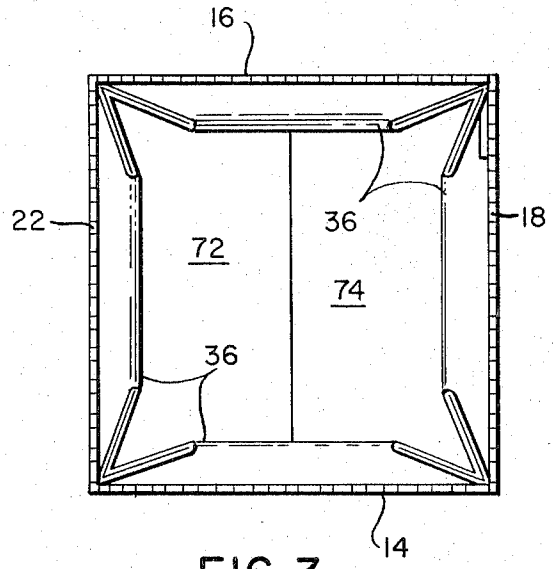
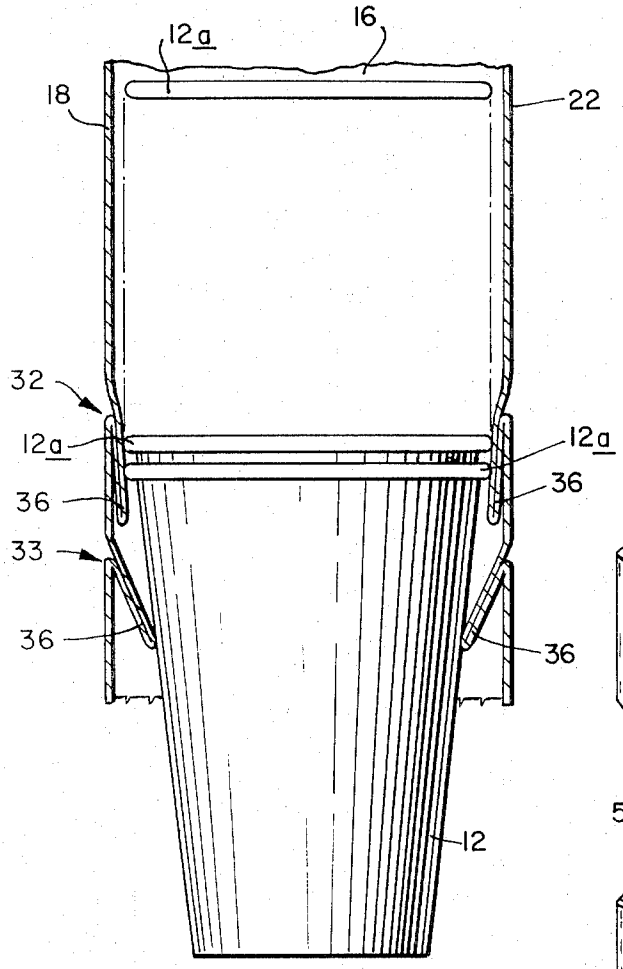


FIG. 3


12a
16
18
22
32
12a
12a
36
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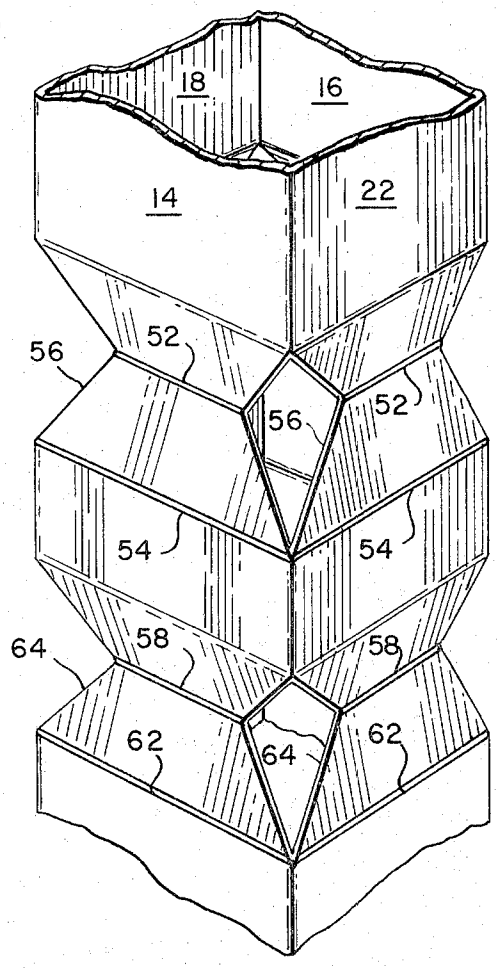
36
36
12

FIG. 4


18
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14
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64
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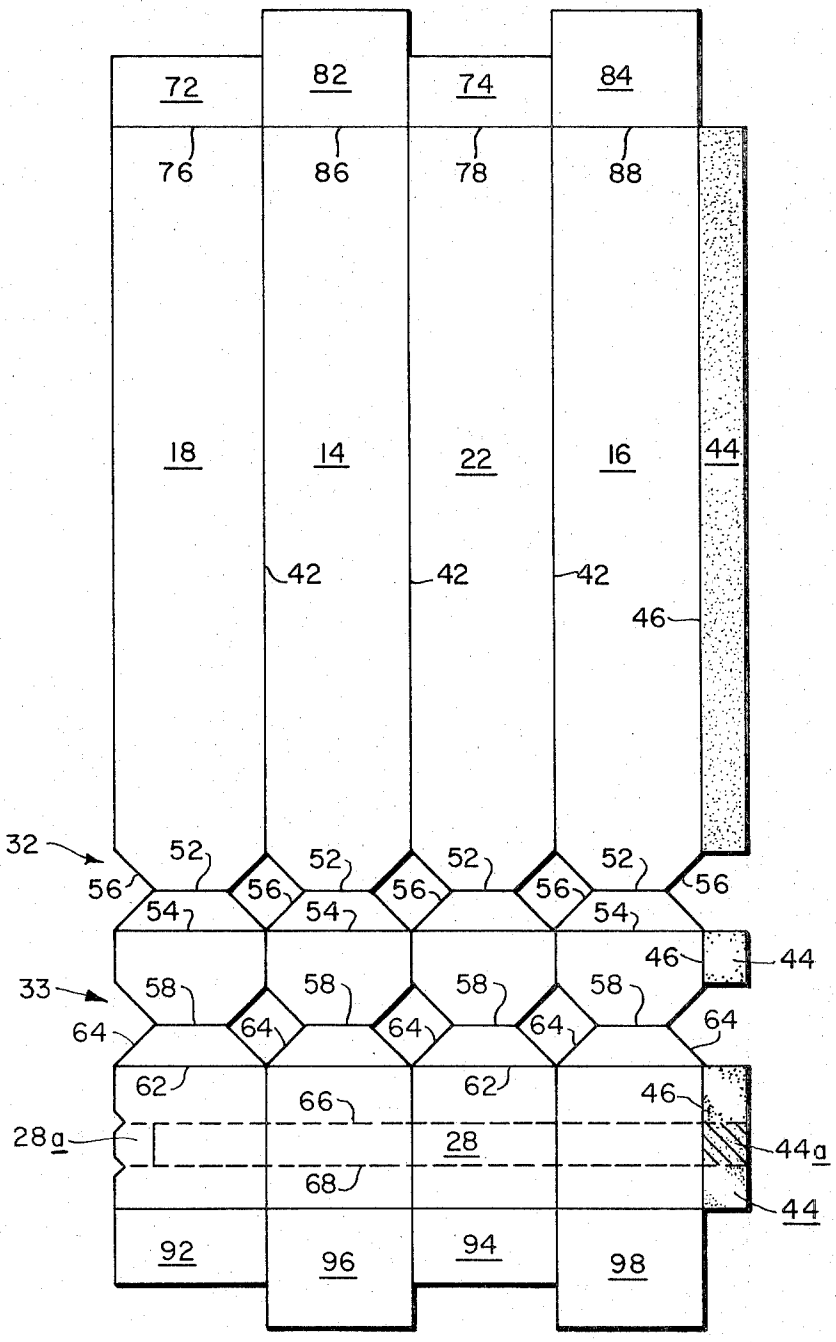
FIG. 5


72
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54
46
44
33
58
58
58
58
64
64
64
64
64
62
62
46
66
28a
28
44a
68
44
92
96
94
98

FIG. 6

DISPENSER CARTON AND BLANK FOR FORMING SAME

BACKGROUND OF THE INVENTION

This invention relates to a carton and a single blank of material for forming the carton. It relates more particularly to a carton of the type for packaging articles such as paper cups.

Nesting articles such as paper cups, ice cream cones, and the like are normally arranged in long stacks which are packaged in a long tubular cardboard carton. When the carton reaches a customer, such as a drug store, or a home owner, the articles are removed from the carton and in some cases placed in a separate dispenser which dispenses the articles one by one from the stack. This procedure is not entirely satisfactory because the loading of the dispenser takes time. Also the dispensers themselves tend to be relatively elaborate and costly pieces of equipment.

SUMMARY OF THE INVENTION

Accordingly, the present invention aims to provide a carton for a stack of articles which protects the articles during shipping and handling, and from which the articles are dispensed in use.

A further object of the invention is to provide a carton of this type which is relatively inexpensive.

Yet another object of the invention is to provide a carton of this type which dispenses the articles one by one in a reliable fashion.

Still another object of the invention is to provide a carton for dispensing nested articles which is formed from a single blank of material.

Another object of the invention is to provide a cardboard blank for forming a dispenser having one or more of the above characteristics.

Other objects will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the features of construction, combination of elements and arrangement of parts which will be exemplified in the following detailed description, and the scope of the invention will be indicated in the claims.

Stated briefly, the carton formed from a single blank of material is composed of generally rectangular front, rear and side panels which are joined together to form a long, generally rectangular tube. The ends of the carton are closed off by conventional top and bottom flaps.

The carton panels are creased to form one or more relatively deep peripheral pleats near the bottom of the carton. The formation of each pleat creates four resilient tabs which project inwardly from the four wall panels. Preferably the carton has two such pleats spaced along the carton to create two groups of four tabs each.

Nesting articles such as paper cups are stacked within the carton. For reasons described in more detail later, when the carton is closed the stack is positioned by the top and bottom flaps so that at least the tabs formed by the lowermost pleat are not pressed flat against the sides of the carton by the cups.

The carton is opened by removing a tear strip adjacent the bottom flaps of the carton which separates the bottom flaps from the rest of the carton. When the carton is hung vertically with the bottom flaps removed,

the stack shifts downward to the point where all the tabs engage the lowermost cup in the stack and prevent further downward movement of the stack.

The cups are dispensed from the bottom of the carton. As each cup is pulled from the stack, the tabs slidably engage the cup until its rim slides beyond them. Whereupon the tabs snap against and resiliently engage the next upper cup in the stack thereby retaining the rest of the stack within the carton.

The present carton has several distinct advantages. First it is made from a single blank of material and therefore its initial fabrication is relatively uncomplicated. Secondly, when the carton leaves the manufacturer it is in a completely flat or knocked down condition so that it can be shipped in a minimum amount of space and at minimum cost. Further, the carton can be made up easily by the user and filled with articles. Finally the articles can be dispensed easily and reliably from the carton itself.

BRIEF DESCRIPTION OF THE DRAWINGS

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawings, in which:

FIG. **1** is a perspective view of a carton embodying the principles of this invention; the carton being shown unopened;

FIG. **2** is a perspective view of the lower portion of the FIG. **1** carton arranged to dispense the carton contents;

FIG. **3** is a bottom view looking into the FIG. **2** carton, with the contents having been removed;

FIG. **4** is a sectional view along line **4—4** of FIG. **2** with parts shown in elevation;

FIG. **5** is a perspective view of the lower portion of the FIG. **1** carton illustrating the invention in greater detail; and

FIG. **6** is a top plan view of the blank from which the FIG. **1** carton is formed.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to FIG. **1** in the drawings, the carton shown generally at **10** is arranged to contain and dispense nesting articles illustrated here as paper cups **12.** The carton is basically an elongated rectangular tube composed of a front wall panel **14,** a rear wall panel **16** and a pair of side wall panels **18** and **22.** The ends of the tube are normally closed off by top and bottom flaps indicated generally at **24** and **26.**

When the carton is to be used to dispense cups, the user pulls off a tear strip shown generally at **28** located near the bottom of the carton and exposes the lowermost cup **12** as illustrated in FIG. **2.** Special pleats shown generally at **32** and **33,** to be described in detail later, retain the stack of cups within the carton, yet permit the cups to be pulled one by one from the bottom of the carton. An opening **34** is provided in the rear panel **16** near the top of the carton for suspending the carton from a wall fixture (not shown) when the carton is being used to dispense the cups.

Turning now to FIGS. **3** and **4,** the formation of each of the peripheral pleats **32** and **33** creates four internal downwardly angled tabs **36.** Because the tabs contain a double thickness of material they are somewhat resilient and when the carton is empty they lay out away

from the carton walls and extend into space that is normally occupied by cups **12.** As shown in FIG. **4,** the stack of cups in the carton displaces the tabs **36** toward the carton walls with the result that the tabs resiliently engage the lowermost cup **12** with enough force to retain the entire stack of cups within the carton even when the carton is open as shown in FIG. **2.**

Still referring to FIG. **4,** when the carton is suspended vertically, the lowermost cup **12** is engaged by the lowermost flaps **36** at a point approximately one-third of the way down on the cup. On the other hand the uppermost flaps **36** engage that cup at a point just below the beaded cup rim **12***a*. Thus when the lowermost cup **12** is pulled from the bottom of the carton, as soon as its rim **12**a passes the uppermost flaps **36,** these flaps promptly snap back to resiliently engage the next upper cup **12** and retain the stack, while the lowermost flaps **36** slidably engage the cup being removed. Accordingly, the cups are dispensed singly from the carton rather than in groups of two or three as commonly occurs with some conventional cup dispensers.

The distance between the bottom cover flaps **26** and the lower pleat **33** is such that when the carton is unopened, as shown in FIG. **1,** the stack of cups **12** is displaced upwardly from the position which it normally occupies when the carton is functioning as a dispenser as shown in FIG. **2.** Accordingly, before the carton is opened, the resilient tabs **36** in pleat **33** all lay farther away from the carton wall panels than they do when the carton is open. Then, when the carton bottom flaps **26** are removed, the stack of cups **12** drops until the lowermost cup engages these tabs and moves them away from their neutral positions so that the tabs firmly grip the cup at the locations described above. If this precaution is not taken, after the carton has been stored for a relatively long period of time, the tabs may be pressed by the cups against the carton walls long enough to lose their resiliency. Then, when the carton is opened, they may not grip the cups strongly enough, resulting in the carton dispensing cups prematurely or in bunches, rather than one at a time.

Referring now to FIG. **6,** the subject carton is constructed from a single blank of material such as cardboard. The carton wall panels **14, 16, 18** and **22** are hinged together along the scorelines **42.** A glue flap **44** is hinged to the free edge of back panel **16** along a scoreline **46.** This flap is arranged to be glued to the free edge of side panel **18.**

A pair of straight, spaced-apart, horizontal scorelines **52** and **54** extend across the blank about three-quarters of the way toward the bottom of the blank. Also a diamond-shaped cut-out **56** is centered on each of the four vertical scorelines in the blank. That is, there are three cut-outs **56** centered on the three scorelines **42** and one cut-out centered on scoreline **46.** Since the scoreline **46** is situated at the carton side seam, one-half of the cut-out is in panel **16** while the other half is located in panel **18.** Thus when glue flap **44** is adhered to the panel **18,** a complete cut-out **56** is formed at scoreline **46.** The part of the glue flap **44** adjacent this cut-out is removed.

The cut-outs **56** are all dimensioned and arranged so that their lowermost corners lie on scoreline **54** while their two side corners coincide with scoreline **52.** Accordingly when the carton blank is reverse folded along line **52,** the pleat **32** is formed which completely obscures the cut-outs **56.**

A similar arrangement of scorelines and cut-outs forms the lower pleat **33.** More particularly, a second pair of spaced-apart horizontal scorelines **58** and **62** are spaced below scoreline **54.** Also four diamond-shaped cut-outs **64,** being of the same size and shape as cut-outs **56,** are located directly below cut-outs **56.** When the blank is reverse folded along scoreline **58,** the resultant pleat **33** completely obscures cut-outs **64.** Actually the cut-outs **56** and **64** are symmetrically arranged so that they define four identical octagons which are located side by side between scorelines **52** and **58.**

The tear strip **28** is defined by a pair of spaced-apart horizontal perforation lines **66** and **68** spaced below scoreline **62** and extending across the blank. The tear strip has a hinged tab **28**a adjacent the free edge of panel **18** so that when the carton is made up as shown in FIG. **1** the user can grasp the tab with his fingers to strip away the tear strip. Preferably the glue flap portion **44**a which underlies tab **28**a when the glue flap is adhered to panel **18** is inked so that the tab does not adhere to the glue flap and is readily accessible.

The carton top and bottom flaps **24** and **26** may be of any conventional construction. In the blank specifically illustrated, the cover flaps **24** include two auxiliary cover flaps **72** and **74** hinged to the top edges of side panels **18** and **22** along scorelines **76** and **78** respectively. Also, a pair of main cover flaps **82** and **84** are connected by score lines **86** and **88** respectively to the top edges of panels **14** and **16.**

The bottom cover **26** is identical, being composed of auxiliary cover flaps **92** and **94** hinged to the lower edges of panels **18** and **22,** and main cover flaps **96** and **98** hinged to the lower edges of panels **14** and **16.** Alternatively, of course, any other conventional type of end closure can be used.

The carton blank leaves the manufacturer with the glue flap **44** adhered to panel **18,** the end flaps open and with the blank extended lengthwise so that it contains no pleats. Thus it can be shipped completely flat in a stack of similar blanks to minimize shipping space. When the blank reaches the user, it is made up by erecting it to a tubular form as shown in FIG. **5.** Then the carton is collapsed in the lengthwise direction so that the above described reverse folds are formed in its wall panels. That is, the panels are folded inward along scorelines **52** and **58** to form the internal tabs **36** shown in FIGS. **3** and **4.**

At this point it should be mentioned that the cut-outs **56** and **64** are included to provide clearance between the adjacent tabs in each pleat. While we have specifically shown these cut-outs as being diamonds, they could just as well be circular, elliptical or any other shape which removes enough material from adjacent panels at the corners of the carton to allow the panels to be folded inward to form the pleats **32** and **33.**

After the pleats are formed, a stack of nested articles such as paper cups are inserted into the carton and the carton end flaps are folded in on one another and sealed to retain the cups within the carton. The stack of cups **12** tends to prevent the carton from being unfolded lengthwise by the normal forces to which it is subjected during handling and while on the shelf.

Thus the carton described above, formed from the single blank of material depicted in FIG. **6,** functions not only as a container for a stack of nesting articles but also as the dispenser of those articles. While we have illustrated the carton specifically as a dispenser for

paper cups, it can just as well be used to contain and dispense other articles commonly arranged in stacks such as ice cream cones, toy pails, plastic flower pots and other such articles. It should be understood in this connection that the precise number, position and spacing of the pleats will depend to some extent upon the size and shape of the articles being dispensed. Also heavier articles may require more than two pleats to retain the stack, while one pleat may suffice in many cases.

Also it is quite feasible to construct the carton with only three wall panels so that it has a triangular cross-section. In this case, each pleat contains only three tabs. In other respects, it is much like the four wall container. The same basic technique can be used to make a circular or polygonal carton dispenser.

The peripheral pleats formed in the carton as described above may perform other functions besides that of dispensing articles. For example, the pleats may be formed at the opposite ends of the carton to create flaps which can resiliently support a fragile article such as a neon tube, ceramic rod or the like and thus protect it from external shock forces during handling. In this case the pleats may be formed with the tabs in the different pleats pointing towards the same or opposite ends of the carton.

It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficently attained, and since certain changes may be made in the above construction without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described.

I claim:

1. A carton comprising

A. a tube of flexible material,

B. a pair of relatively closely spaced peripheral score lines extending around the tube at selected locations along its length,

C. a plurality of cutouts,

1. extending between the score lines, and

2. distributed around the periphery of the tube so that the tube can be collapsed lengthwise at the score lines to form two or more resilient tabs projecting inwardly toward the centerline of the tube,

D. at least one additional pair of score lines spaced from the first pair, and

E. a similar set of cutouts associated with the additional score line pair for forming an additional set of resilient internal tabs spaced axially along the tube from the first set, the score lines in each pair being formed so that when the tube is collapsed lengthwise, all the tabs point toward the same end of the tube.

2. The carton defined in claim **1** wherein all of the tabs are located near said one end of the tube so that when a stack of nested articles is positioned in the tube with the small end of the lowermost article protruding from said one end of the tube, the tabs resiliently engage the lowermost article so as to retain the stack within the tube and permit articles to be pulled from the stack one by one from said one end of the tube.

3. The carton defined in claim **2** and further including

A. means for closing said one end of the tube,

B. means for removing the closure means, and

C. means for closing the other end of the tube.

4. The carton defined in claim **3** wherein the removing means is comprised of a tear strip located between said one end of the tube and the nearest set of tabs.

5. The carton defined in claim **1** and further including a tear strip extending around the tube periphery adjacent the bottom end closure means to facilitate removal of the bottom closure means.

* * * * *