

**[54] VENTILATED STACKABLE
CONTAINER**

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[58] **Field of Search**.....229/37, 27, DIG. 14, 40, 52 B,
229/34; 206/45.31, 65 R, 46 F; 99/171 R

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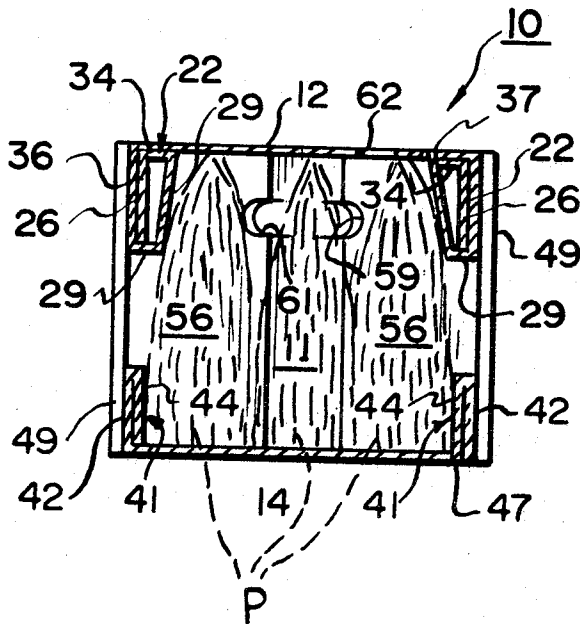
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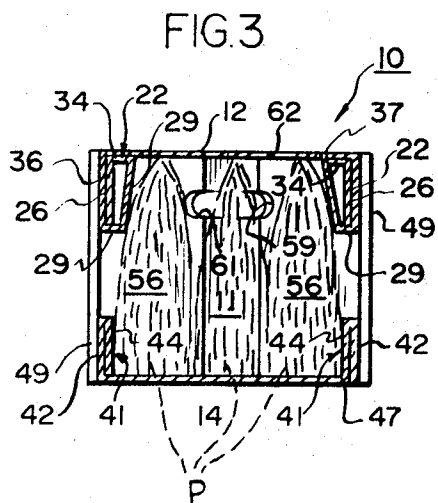
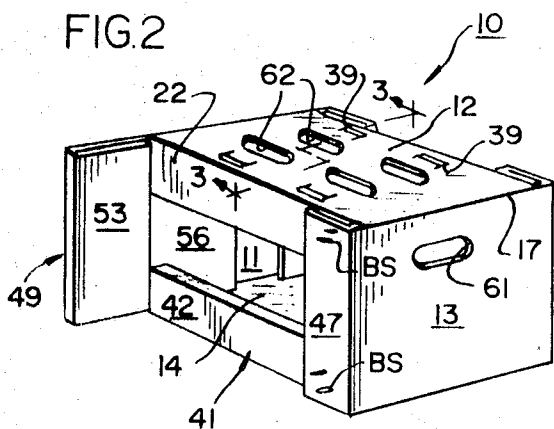
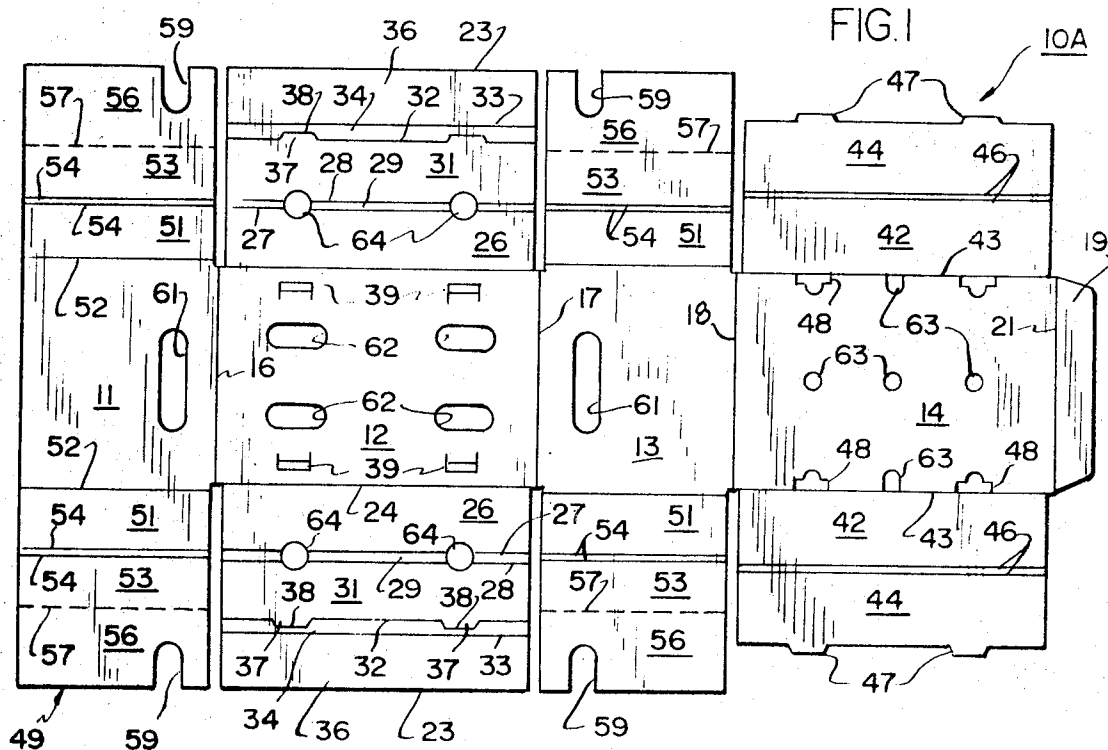
[57] **ABSTRACT**

A container is formed from a unitary cut and scored sheet of corrugated or other paperboard. The blank is folded along score lines and connected at a manufacturer's joint to provide top, bottom and opposed end panels. The top panel has side flaps extending therefrom folded upon themselves to provide tapered cellular structures giving good beam strength to a top panel. The bottom panel likewise has flaps extending therefrom and folded upon themselves to provide stiffening of the bottom. The upper and lower stiffening structures are spaced to provide open sides of the container for ventilation of the contents. The sides of the end panels have flaps extending therefrom, and folded upon themselves to provide vertical stiffeners and good stacking strength.

By reason of the tapered cellular structures the internal transverse cross-section of the container is essentially trapezoidal, making the container essentially suitable for tapered bundles of stalk vegetables, such as asparagus.

4 Claims, 3 Drawing Figures





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VENTILATED STACKABLE CONTAINER

It is a particular object of this invention to provide a container having good stacking strength with open sides for ventilation of the container contents.

Another object is to provide containers formed from a unitary cut and scored blank, and characterized by longitudinally extending top and bottom members folded into position to provide good stacking strength, the completed container being characterized by open sides defined by the folded top and bottom members and the end stiffener members to provide for ventilation of the contents of the container.

THE DRAWING

FIG. 1 is a plan view of a cut and scored blank for forming a ventilated container according to the present invention;

FIG. 2 is a perspective view thereof; and

FIG. 3 is a section take along the line 3—3 of FIG. 2 looking in the direction of the arrows.

The improved ventilated container is referred to by the reference numeral 10 and is formed from a cut and scored blank 10A. The latter is comprised of an end panel 11, a top panel 12, an opposite end panel 13 and a bottom panel 14. The said panels are hingedly joined together serially by score lines 16, 17, and 18. A manufacturer's joint flap 19 is foldably connected to the bottom panel 14 along a score line 21, and the manufacturer's joint flap 19 is joined to the bottom edge of the end panel 11. Staples or glue may be employed to make such joints.

A pair of upper stiffener elements 22 are joined to each side of the top panel 12, each element 22 is comprised of flaps 23 extending from opposite sides of the top panel 12. Each flap 23 is foldably connected to the top panel along a score line 24 to define a flap element 26 in turn connected to a stiffener flap element 29 defined by spaced score lines 27 and 28. An inner stiffener flap element 31 is defined by score line 32 spaced from score line 28. An upper stiffener flap element 34 is defined by a spaced score lines 32 and 33, and an inside stiffener flap element 36 is foldably connected to the upper stiffener flap elements 34 by the score line 33.

Flap 23 is folded in the manner seen in FIG. 3 so as to provide good beam strength stiffening the top panel 12. Upper stiffener element 22 is locked in the folded position seen in FIG. 3 by means of spaced locking tabs 37 formed by cut lines 38 in the score line 32, locking tab 37 being insertable into a half-shear 39 formed in the underside of the top panel 12 and known as a Walker lock.

The bottom panel 14 is stiffened by a lower stiffener element 41 comprised of an outer flap element 42 hingedly connected to the bottom panel 14 along a score line 43. An inner flap element 44 is foldably connected to the outer flap element 42 by spaced score lines 46. Inner flap element 44 can be locked in the position seen in FIG. 3 by means of locking tabs 47 at the free edge of inner flap element 44, the locking tabs 47 being engaged with half-shears 48 on the inside of and along opposite side edges of the bottom panel 14, known as Walker locks.

Each end of the container seen in FIG. 2 is provided with vertical stiffener members 49, each being comprised of an outer flap element 51 hingedly connected to end panel 11 or 13, as the case may be, by a fold line 52. An inner flap element 53 is foldably connected to outer flap element 51 by spaced fold lines 54. A distal flap portion 56 is foldably connected to the inner flap element 53 along a score line 57.

The vertical stiffener member 49 is formed in the manner seen in FIG. 2 and distal flap portions 56 are tucked inside the end panel 11 or 13 to land additional stiffness thereto. Vertical stiffener members 49 are secured to the upper and lower stiffener elements 22 and 41 by means of blind staples BS seen in FIG. 2.

Each of the distal flap portions 56 is preferably provided with a notch 59 therein which in the assembled position of the vertical stiffener members 49 falls into register with handholds 61 in the end panels 11 and 13.

The contents of the container 10 may be hydro-cooled and in order to provide access for water to the contents the top panel 12 is provided with water access holes 62. The bottom panel 14 is also provided with drain holes 63 for draining excess water from the contents. Stiffener members 22 are provided with drain holes 64 in the stiffener flap elements 29 thereof to drain any water trapped within members 22.

Structure according to the present invention is particularly adaptable for the packaging of stalked farm products such as asparagus, and it will be noted in FIG. 3 that the provision of the trapezoidal-shaped upper stiffener elements 22 results in the transverse cross-section of the container 10 being essentially trapezoidal. The product, asparagus, is identified by reference letter P and shown in phantom in FIG. 3.

The container according to the present invention is assembled for packing, one side thereof being first completed with the upper stiffener elements 22 and the lower stiffener element 41 folded to position the vertical stiffener members 49 being then folded to position. The container 10 is then placed with the completed side placed downward, and then loaded from the opposite side thereof. When loaded the opposite side is formed and closed in the manner as described for the first side thereof.

By reason of the provision of the upper and lower stiffener elements good strength is provided for the container 10, and by reason of the vertical stiffener elements 49 good stacking strength is afforded, the product packed therein being isolated from any loads incident to placing the containers one on top of the other.

By reason of the dimension of the stiffener elements at the sides and ends of the container a relatively large sized ventilating opening is provided without disturbing the contents of the container.

I claim:

1. In a ventilated stackable container especially adapted for the packaging of articles such as fresh produce having top portions of smaller transverse dimension than base portions thereof, said container being characterized by vertical elements giving good stacking qualities and horizontal beam elements resistant to deflection under superimposed loads and confining the top portions of said articles therebetween, said container being formed from a unitary cut and scored paper-board blank and comprising:

- a. top, bottom and opposed end panels hingedly connected together to form a container sleeve;
- b. flaps extending from said top and bottom panels and folded upon themselves to provide upper and lower horizontal stiffener elements for stiffening said top and bottom panels;
- c. said flaps extending from said top panels being comprised of foldably connected flap portions foldable upon themselves to define upper stiffener elements of trapezoidal cross-sections confining the top portions of said articles therebetween;
- d. end flaps extending from the sides of said end panels and foldable upon themselves to provide vertical stiffener members at the corners of said container;
- e. said upper and lower stiffener elements and said vertical stiffener members being in generally coplaner relationship to define the sides of said container;
- f. said upper and lower elements and said vertical stiffener members being of dimensions defining a central aperture in each side of said container for ventilation thereof.

2. A container according to claim 1 wherein each of said upper stiffener elements is provided with means for locking same in position to said top panel.

3. A container according to claim 1 wherein each of the end flaps includes an extension therefrom foldable into position along a correlative end panel.

4. A container according to claim 1 wherein the flaps extending from said bottom panel include flap portions foldable into facing relationship with a distal portion having means engageable with said bottom panel to lock said lower horizontal stiffener elements in position.

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