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VENTILATED SHIPPING CONTAINER

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Fig. 1.

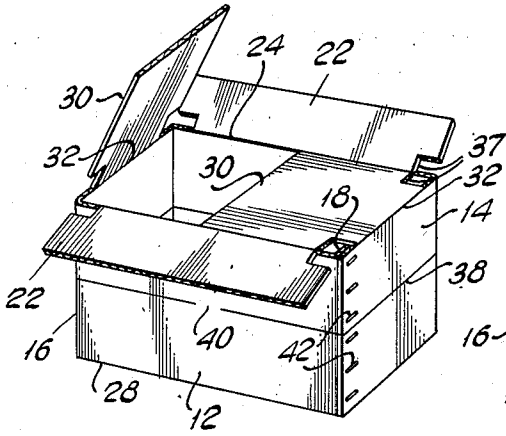
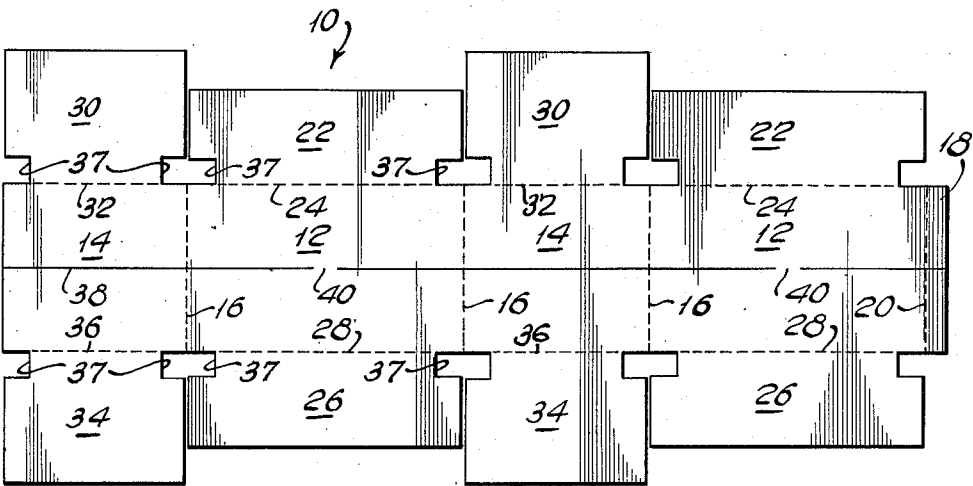


Fig. 2.

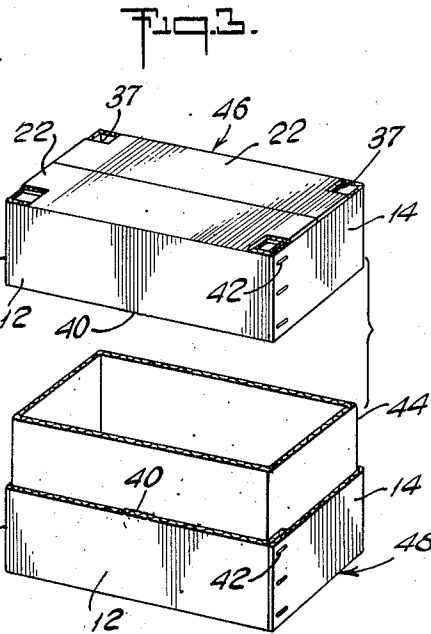


Fig. 3.

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VENTILATED SHIPPING CONTAINER

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1 Claim. (Cl. 229—6)

This invention relates to new and useful improvements in shipping containers made of corrugated paperboard or the like, and particularly seeks to provide a container for the shipment of citrus fruits which is provided with means for ventilating the fruit packed therein.

One of the primary problems faced by citrus shippers is that of providing means for rapidly cooling fruit after it has been packed in a shipping container. Previously the containers used were not ventilated sufficiently to permit the escape of heat therefrom as they were being cooled. Because corrugated paperboard is an excellent insulator the length of time necessary to adequately cool fruit packed inside corrugated paperboard containers is quite long unless the interior of the container is ventilated. Adequate ventilation is not obtained with present types of containers and therefore refrigeration is costly and spoilage of the fruit is excessive.

This invention overcomes these disadvantages by providing an improved shipping container having chimney-like ventilating corners which permit the rapid escape of heat from the fruit inside the containers so that refrigeration time and the cost therefor are minimized. When oranges, grapefruit, or similarly sized produce are packed in containers constructed in accordance with this invention the heat which they may possess is rapidly drawn upwardly through the chimney-like corners. In addition, a ventilated shipping container constructed in accordance with this invention may be filled with produce, then closed by conventional automatic sealing machines, opened after shipment for inspection purposes, and closed as securely as before without visible evidence of having been opened.

Accordingly, it is an object of this invention to provide a shipping carton particularly useful in the transportation of citrus fruits which require ventilation during their cooling.

It is a further object to provide a shipping carton in which the top and bottom corners are cut away to provide chimney-like ventilating means.

Another object is to provide a ventilated shipping container which after filling may be closed by conventional sealing machinery which acts to glue, tape or staple top closure flaps in a closed position and which is provided with a telescoping top half normally secured to the bottom half by means which can be easily severed to permit removal of the top half for inspection purposes.

It is a further object to provide a ventilated shipping container having top and bottom closure flaps which are cut away at the corners to form vertically aligned ventilating holes from the top to the bottom to permit the continued ventilation of the container after it has been closed and filled with citrus fruits and which is provided with an easily removable top half which can be replaced after opening for inspection without evidence of having been removed.

The various features of novelty which characterize the invention are pointed out with particularity in the claim annexed to and forming a part of this specification. For a better understanding of the invention, its operating ad-

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vantages and specific objects attained by its use, reference should be had to the accompanying drawings and descriptive matter in which there is illustrated and described a preferred embodiment of the invention.

In the drawings:

Fig. 1 is a plan view of a blank from which a container constructed in accordance with this invention may be erected;

Fig. 2 is a perspective view of the erected container prior to the closing of the top flaps; and

Fig. 3 is a perspective view of the erected container showing the liner insert therein and the top half removed.

Referring to the drawings in detail, the invention as illustrated is embodied in a container formed from a single blank 10 of corrugated paperboard or the like and includes a pair of side walls 12, 12 and a pair of end walls 14, 14 separated by and foldable about vertical score lines 16. The free end of one of the side walls 12 is provided with a stitch tab 18 separated therefrom and foldable about a vertical score line 20.

Each side wall 12 carries a top closure flap 22 at its upper end which is separated therefrom by the horizontal score line 24, and each side wall 12 is also provided at its lower end with a bottom closure flap 26 separated therefrom by a horizontal score line 28. Each end wall 14 is provided with a top-securing flap 30 separated therefrom by a score line 32 and a bottom-closure flap 34 separated therefrom by a score line 36.

In accordance with this invention each of the top closure flaps 22, 22 and 30, 30 and the bottom closure flaps 26, 26 and 34, 34 have rectangular areas at their corners adjacent their respective side and end walls notched or cut away as at 37. The end walls 14, 14 and the side walls 12, 12 are slit along a horizontal line 38 which extends substantially through the center thereof from one end to the other with the exception of a short section 40 in the center of each side wall 12 which is not slit.

The container is erected by folding the side and end walls about the score lines 16 and the tab 18 about the score line 20 and securing the tab 18 to one of the end walls 14 by staples 42. The bottom closure flaps 26 and 34 are then folded about their respective score lines 28 and 36 and secured as by gluing in a horizontal position beneath the side and end walls. A liner 44, comprising a single sheet of corrugated board folded into a rectangular tube slightly smaller than the inner dimensions of the erected container, is then placed inside the container.

The container is then filled with citrus fruit or other produce of a size ranging from lemons to grapefruit and the top closure flaps 22, 22 and 30, 30 are then folded in succession about their respective score lines 24 and 32 and glued or otherwise fastened in a horizontal position above the side and end walls (see Fig. 2), the latter being done by conventional automatic sealing machinery. The fully erected and closed container has vertically aligned holes at each top and bottom corner defined by the corner notches 37 which permit the ventilation of the container from the bottom to the top with a chimney-like effect. The citrus fruit arranged in the box is large enough to permit unhindered passage of air about the corners and up through the holes.

A desirable feature of the box constructed in accordance with this invention is that the top half, generally designated 46, may be lifted off the bottom, generally designated 48, by cutting or tearing the section 40 in the middle of the side walls 12. It is then possible to inspect the contents of the box and to replace the top half 46 by pushing it down around the outside of the liner 44 until it contacts the bottom half 48. The box thus closed presents an appearance similar to the original, the only

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change being that the sections 40 have been severed. If desired after inspection the top half 46 may be secured to the bottom half 48 by sealing tape applied along the line of junction.

The invention provides an excellent container for the shipment of citrus fruits of the size range from lemons to grapefruit. The containers can be stacked one above the other, and in this position ventilation can take place at the corners of all the stacked containers. The holes cut in the top and bottom closure flaps provide chimney-like ventilators which permit the free rise of warm air from inside the containers during refrigeration. The container provides an excellent means for inspecting the contents and/or removing some of the contents for sale and then replacing the top.

It is, of course, to be understood that various details of arrangements and proportions of parts may be modified within the scope of the appended claim.

I claim:

A shipping container comprising side walls and end walls joined together to form a substantially rectangular tube, said end walls and the major portions of said side walls being slit along a horizontal line extending through said side and end walls, a bottom closure having open-

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ings at each corner and comprising bottom flaps formed as integral extensions of said side and end walls and hingedly connected thereto, each of said bottom flaps having notched portions cut away from each corner adjacent its associated side and end walls to form said bottom corner openings, a top closure having openings in each corner, each vertically aligned with a corresponding opening in said bottom closure and comprising top flaps formed as integral extensions of said side and end walls and hingedly connected thereto, each of said top flaps having notched portions cut away from each corner adjacent its associated side and end walls to form said top corner openings, and a rectangular liner slightly smaller than said rectangular tube arranged between said top and bottom closures inside said tube.

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