

July 16, 1963

J. J. MASI

3,097,781

ICE PACKED FOOD CONTAINER

Filed Oct. 6, 1958

2 Sheets-Sheet 1

Fig. 1

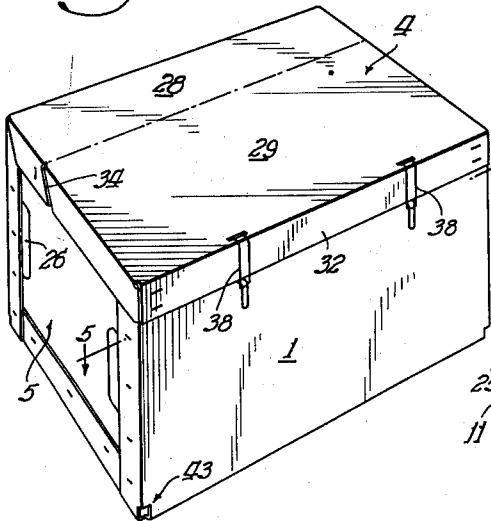


Fig. 2

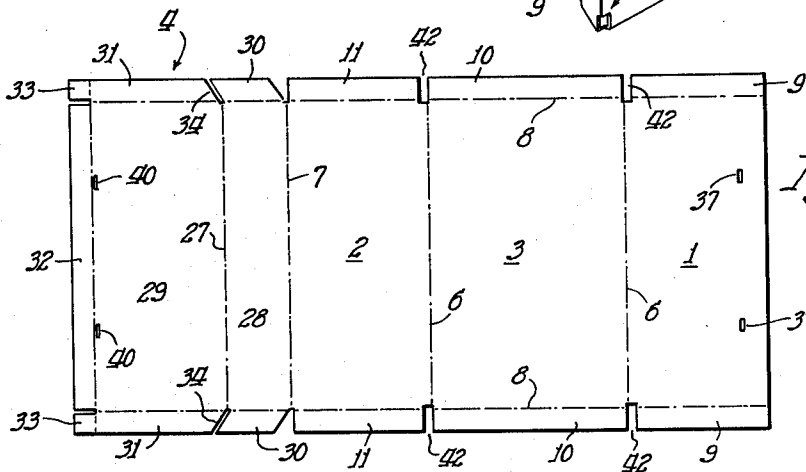
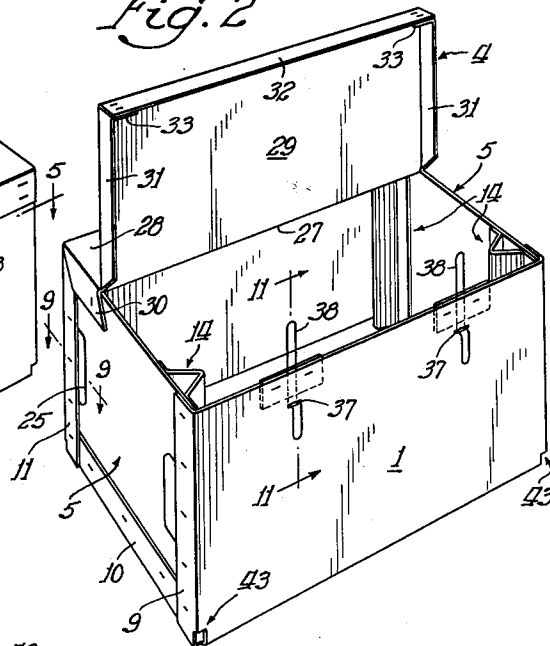


Fig. 3

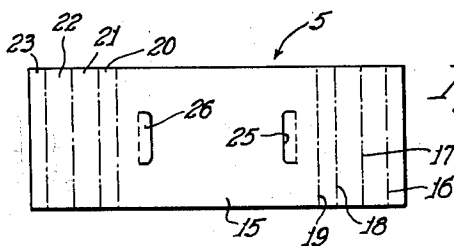


Fig. 4

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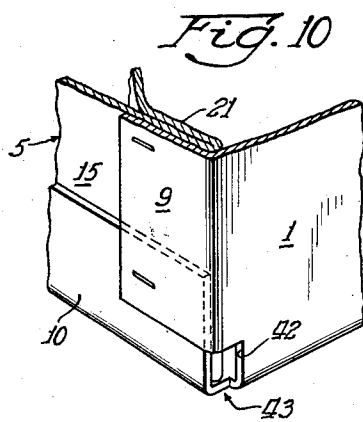
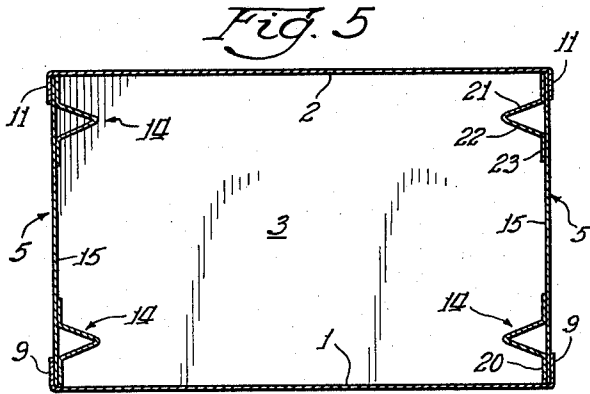
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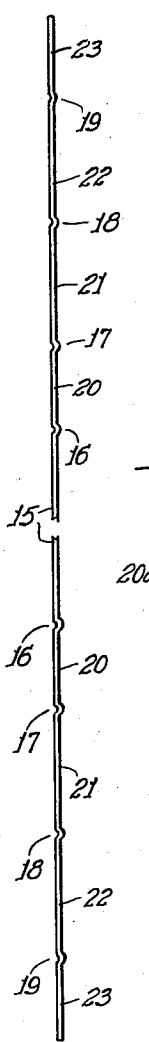
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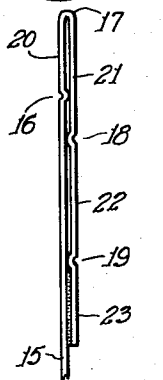
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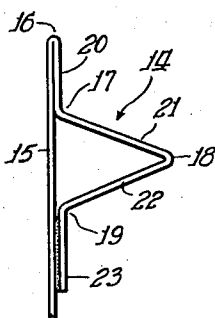
*Fig. 6*



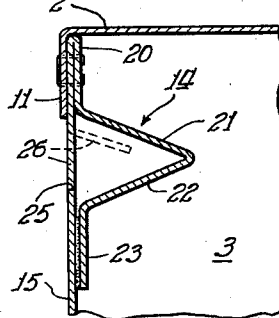
*Fig. 7*



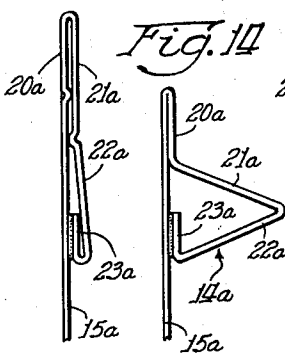
*Fig. 8*



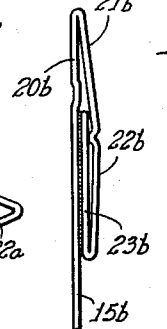
*Fig. 9*



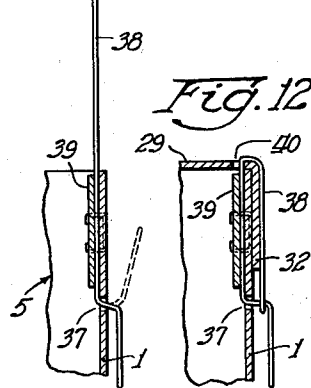
*Fig. 13*



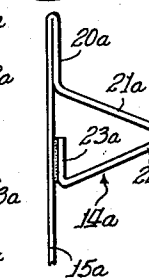
*Fig. 15*



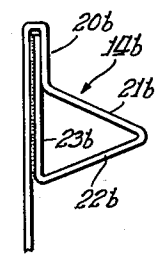
*Fig. 11*



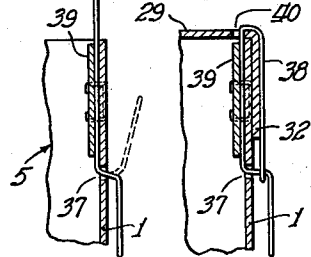
*Fig. 14*



*Fig. 16*



*Fig. 12*



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1

3,097,781

## ICE PACKED FOOD CONTAINER

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4 Claims. (Cl. 229—23)

The present invention relates to shipping containers and more particularly to containers formed of heavy foldable paperboard suitable for shipment of poultry and other meat products in cases in which it is desired to employ ice in contact with the container contents.

One object of the invention is to provide an improved container for shipment of dressed poultry and other meats where cracked ice is to be placed in contact with the contents.

Other objects are to provide internal reinforcing elements to give the container improved stacking qualities; to provide finger openings to facilitate carrying the container; to provide drainage openings to permit effective drainage of water formed as the ice within the container melts; and to locate both the finger openings and drainage openings with respect to the reinforcing elements so that objects external to the containers will not be likely to come into contact with the container contents.

A further object is to provide a container with a flanged closure panel constructed in such manner that part of the panel is hinged for easy access to the contents and another part serves to reinforce and make more rigid the top and end sections of the container.

Other and more detailed objects and advantages of the present invention will become apparent as the description proceeds.

In the drawings

FIG. 1 is a perspective view of the container of the present invention showing it in its closed and sealed condition;

FIG. 2 is a perspective view showing the container with its hinged cover in raised position;

FIG. 3 is a plan view of a preferred form of blank from which the body and cover of the container may be formed;

FIG. 4 is a plan view of a preferred form of blank from which the end wall and the vertical reinforcing elements may be formed;

FIG. 5 is a top view taken in cross-section along line 5—5 of FIG. 1;

FIG. 6 is an edge view, on an enlarged scale, of the blank illustrated in FIG. 4;

FIG. 7 is a fragmentary edge view on an enlarged scale showing the manner of folding and securing together an end portion of the reinforcing element;

FIG. 8 is a view similar to FIG. 7, showing how the parts are refolded to move the reinforcing element to its expanded condition;

FIG. 9 is a fragmentary cross sectional view taken along 9—9 of FIG. 2 showing how the hinged tab in the finger opening may be received within the expanded reinforcing element;

FIG. 10 is a fragmentary perspective view showing the drainage opening at a lower corner of the container;

FIG. 11 is a fragmentary cross sectional view taken on line 11—11 of FIG. 2, showing sealing means for the hinged closure;

FIG. 12 is a view similar to FIG. 11, showing the front portion of the cover in closed position with the sealing means in condition to retain the cover closed;

FIGS. 13 and 14 are fragmentary edge views showing a modification of the portion of the end wall which includes the reinforcing element; and

2

FIGS. 15 and 16 are views similar to FIGS. 13 and 14, showing a further modification.

The invention as disclosed herein is embodied in a six sided container, preferably formed of relatively heavy paperboard. The top, bottom and two side walls are formed from a single blank. The top wall may comprise a flanged, hinged cover and the side walls and bottom may have attaching flaps by means of which the end wall may be secured as by stapling or gluing. The end walls may be identical. Each end wall is formed to include a vertically disposed, hollow reinforcing element. This is accomplished by having edge extensions carried on vertical edges of the end wall. Such extensions are formed with a plurality of parallel fold lines to provide four panels. The fourth or outermost panel is preferably presecured to the inner face of the end wall and is delivered to the user in such condition. In order to keep the end wall assembly relatively flat, the assembly is folded so that the first panel remains in the plane of the end wall while the two intermediate panels remain in the plane of the fourth panel and these latter three panels may thus lie flat against the end wall and first panel. By forming the container in this manner the body blank and presecured end wall assembly may be shipped flat to the user, and by such user set up, preferably by stapling.

Referring more particularly to the drawings, the container includes side walls 1 and 2, a bottom wall 3, a top indicated as a whole at 4 and two end walls indicated as a whole at 5, 5. As shown in FIG. 3 the top, bottom and two sides are preferably formed from a single blank of relatively heavy paperboard such as solid fibre board. This blank is suitably notched, cut and creased or scored to form the various wall sections. The side walls are defined from the bottom wall by score lines 6, 6 and the top is defined from its attached side wall 2 by score line 7. Score lines 8, 8 are impressed along the edges of the blank to provide attaching flaps 9, 10 and 11 for the respective panels 1, 3 and 2. The top 4 will be described in detail below.

The end wall, indicated as a whole at 5, preferably includes two vertically disposed reinforcing elements indicated generally at 14, 14. As shown in FIG. 4, the end wall assembly comprises a central section or panel 15 and has impressed in each edge portion a series of parallel score lines 16, 17, 18 and 19 to provide a plurality of hingedly related panels 20, 21, 22 and 23. As shown herein, the panels 21 and 22 form the inwardly directed portions of the reinforcing element 14.

The end wall assemblies are preferably preglued or otherwise secured at the container plant for the convenience of the user who will set up the container. For this purpose the end wall assembly is folded to a relatively flat shape and glued in such condition, ready for setting up to expand the reinforcing elements just prior to the operation of securing the edges of the end wall to the attaching flaps of the body blank. As illustrated in FIG. 7, the end wall assembly is folded along fold line 17, leaving the central panel 15 and panel 20 in a single plane with panels 21, 22 and 23 overlying the first mentioned panels in an adjacent single plane. Prior to folding, suitable adhesive is applied to panel 23, or to panel 15 at the place where panel 23 is to engage the panel 15, and the parts are held under suitable pressure until the adhesive has set. For facilitating the setting up of the end wall ready for stapling to the body walls, certain of the score lines may be prebroken or prefolded—this being an expedient well known in container manufacture.

To aid in handling the container finger openings 25, 25 are cut in the panel 15 in alignment with the reinforcing elements 14, 14 so that such elements will bridge over the finger openings. It is preferred to cut the finger openings

around three sides only and score the fourth side, leaving within the opening a tab or flap 26 which is intended to be allowed to remain in position to close the opening until it is desired to move the filled container by hand. As shown in FIG. 9, the flap 26 may swing freely within the space formed by the angularly disposed panels 21 and 22.

The top panel 4 may be secured to the other walls in any one of a number of ways but preferably the top panel has a score line 27 impressed therein parallel with the fold line 7 forming a stationary panel 28 and a hinged panel 29. Flaps or flanges 30 and 31 are provided on the panels 28 and 29 respectively and an end flap or flange 32 is provided on the blank at the front or free edge of the hinged panel 29. By separating the front flap 32 from flaps 31, 31 by slits a pair of corner flaps 33, 33 is provided. By folding the flaps 31, 31 and 32 at right angles to the hinged panel 29 and securing the corner flaps 33, 33 to the flap 32 a cover flange on three sides of the hinged cover panel may be formed. The flap 30 is preferably separated from companion flap 31 by means of an inclined slit 34.

A preferred manner for manually setting up the container will now be described. The body blank will be held with the flap 8 on the bottom panel folded at right angles to such panel. One end wall assembly will be placed against the flap 8 with the reinforcing panels 21 and 22 disposed at right angles to such flap and staples will be driven through the central edge portion of the end wall to join it to the flap 8. The operator will next grasp the end wall assembly in both hands and apply inward pressure along fold lines 17, 17, causing the panels 20, 21 and 22 to assume the position shown in FIG. 8. While the end is so held, the operator will drive a retaining staple near the top of the end wall so it will pass through the panels 15 and 20, thus holding the narrow panel 20 in preliminary position against the main panel 15 of the end wall. The operator may then staple the flaps 9 and 11 successively to secure the end wall assembly along the vertical corners of the container. The staples will thus pass through three layers of paperboard, that is, narrow panel 20, central panel 15 of the end wall, and one of the vertical attaching flaps—see particularly FIG. 9. At the same time the hollow, V-shaped reinforcing elements 14 will be secured in permanent expanded position.

After securing the bottom and vertical corners of the container at each end, the operator will staple the short flaps 30, 30 to the end wall, as indicated in FIGS. 1 and 2. Preferably these staples will pass through panel 15 and narrow panel 23. The cover flanges or flaps 31, 31 and 32 may be secured together at any desired time, either before or after the other stapling operations just described. It is to be noted that by utilizing a part of the top panel 4 as a stationary closure and stapling the flaps 30, 30 to the end walls the tendency of the end walls to bulge outward due to pressure of the contents will be kept to a minimum.

Means are preferably provided for releasably locking the cover panel 29 in closed position. For this purpose slots 37, 37 are formed in the front wall and through these slots flexible elements such as wire loops 38 are inserted. These may be held in place by stapling a piece of paperboard 39 over the wire loop where it passes in contact with the inside face of the front wall. Slots 40, 40 are formed in the cover panel to receive the upwardly extending portion of the wire loop. As shown in FIG. 12, after the cover panel has been closed, at the same time inserting the wire loops through the slots 40, the upper ends of the loops may be bent down and the lower end of each may be inserted through the bent over ends, after which the lower end may again be bent downward (see FIG. 12) thus releasably locking the container cover in closed position.

Means are provided for drainage at the lower corners of the container. For this purpose the slots indicated at

42, 42 on each end of the attaching flanges are made relatively wide and are cut to extend a short distance into the body blank along score lines 6, 6. In order to locate the openings so they will not be obstructed to any appreciable extent by the corners of the end assembly, the slots 42 are formed so that one edge of the slot extends substantially in alignment with the score line. The slots are thus cut principally from the material of the flaps 9 and 11 and the side walls 1 and 2. By this construction, when the container is formed, an effective drainage opening 43 is provided at each corner.

Variations in the container end assembly may be made as shown in FIGS. 13 to 16, inclusive. In FIGS. 13 and 14 the extended portion at each end of the central panel 15a may comprise narrow panels 20a, 21a, 22a and 23a. The construction and manner of assembling is substantially the same as shown in FIGS. 6, 7 and 8, except that the panel 23a is made narrower than panel 23 and it is folded inwardly of the reinforcing element indicated as a whole at 14a.

In FIGS. 15 and 16 the panel 23b is made wider than either panels 23 or 23a. This panel, as shown, extends substantially to the edge of panel 20b so that when the reinforcing element 14b is brought to expanded position the panel 23b will completely underlie the element 14b and extend to the edge the panel 15b. The container vertical corners will thus be made even more rigid as this construction, together with the front and rear wall flanges at the respective corners will provide four thicknesses of paperboard.

It is to be noted that since the vertical reinforcing elements are of a length equal to the inside vertical dimension of the container, portions of the top closure will rest upon the upper edges of the elements, thereby giving the containers excellent stacking qualities. In addition, the employment of three thicknesses of paperboard (or four thicknesses as in the case of the modified form shown in FIGS. 15 and 16) adds appreciably to the stiffness of the corners. It is possible, therefore to utilize somewhat lighter weight paperboard than otherwise and still have excellent stacking qualities.

By locating the reinforcing elements so they are spaced somewhat from the vertical corners of the container the contents of the container, especially in the case of dressed poultry, is not likely to come into close relation to the drainage openings and thus not likely to come into contact with exterior objects which might tend to contaminate the container contents.

By locating the finger openings so that they communicate only with the interior of the reinforcing elements rather than opening into the container, the container contents will be protected from any direct contact with the hands of operators handling the filled containers. Also, since the finger opening does not go to the interior of the container, maximum end wall insulation can be maintained.

From the foregoing it is apparent that the present invention provides a sturdy and efficient form of reinforced container which may be partially prepared at the container plant and completed by the user who needs only to have a container stapling machine. The blanks for the container may be shipped to the user in flat form and require only a relatively small amount of storage space while awaiting use. The container after being loaded with its contents may have its cover quickly and easily sealed and easily unsealed when access to contents is desired. By providing finger openings in pairs placed near the vertical corners of the container, the loaded containers may be grasped and lifted from either the front or rear, or two persons may at the same time carry the container by utilizing the finger openings.

While the present description sets forth certain preferred embodiments of the invention, numerous changes may be made in the construction without departing from the spirit of the invention, and it is therefore desired

5

that the present embodiments be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

I claim:

1. A reinforced container formed of foldable sheet material, comprising a rectangular end wall, an elongated body blank comprising a bottom and two side walls, said side walls having corner flaps extending from at least one end thereof to which the side portions of the end wall may be secured, said end wall having an extended portion on at least one of its lateral edges defined from such lateral edge by a fold line, said edge portion including four foldable panels defined from each other by fold lines parallel with the fold line between the end wall and its extended edge portion, the first panel hinged at the edge of the end wall and the fourth or end-most panel being each disposed flatwise against the inner face of the end wall, the positioning of the fourth panel on the end wall being such that the two intermediate panels extend inward in V-shape, providing a vertical reinforcing element on the end wall, and means for securing the first panel and its attached end wall edge portion to the vertical corner flap on a side wall.

2. An end wall for use in constructing a container which includes a body portion comprising integrally hinged side and bottom walls with securing flaps at the ends of the side walls for attachment to the vertical edge portions of the end wall, such end wall comprising a central panel and an extended edge portion hinged along a fold line on each of its opposite vertical edges, each extended edge portion including four foldable panels separated from each other by fold lines extending parallel with the fold line between the end wall and extended edge portion, the fourth or outermost panel of the extended edge portion being secured to the inner face of the end wall at a location spaced inward of the end wall vertical edge a distance so that the first and fourth panels lie in a single plane against the first panel and end wall, the distance between the first and fourth panels being such that the two intermediate panels converge inwardly of the end wall in V-shape and thereby define with the central panel a generally triangular structure, the vertical edge portions of such end wall assembly being adapted for stapling connection with vertical end flaps on the side walls.

3. A reinforced container formed of foldable paper board, comprising:

(a) a horizontally disposed bottom wall;

6

- (b) a plurality of interconnected vertically disposed side walls of the same height connected to and up-standing from said bottom wall; and
- (c) at least one vertically disposed V-shaped reinforcing member positioned entirely within the container against one of said side walls;
- (d) said member including a pair of vertically extending side panels attached to said one side wall in parallel relationship therewith, and
- (e) a pair of uninterrupted inwardly converging vertically extending center panels;
- (f) said center panels being hingedly interconnected at their inner edges throughout their entire length and being hingedly connected at their outer edges to the respective side panels;
- (g) all of the panels of said member being of the same height as the side walls of the container;
- (h) one of said reinforcing member side panels being disposed at a corner of the container adjacent another side wall of the container and being hingedly connected to said other side wall.

4. A reinforced container according to claim 3, and including a vertically extending flap hingedly attached to an edge of said other wall and disposed at right angles to said other wall in parallel relation with said one wall, and means interconnecting said flap, said one wall, and said one side panel.

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