April 24, 1951 W. C. GEORGE 2,549,801

COLLAPSIBLE CONTAINER PARTITION AND LINER UNIT

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FIG. 1.

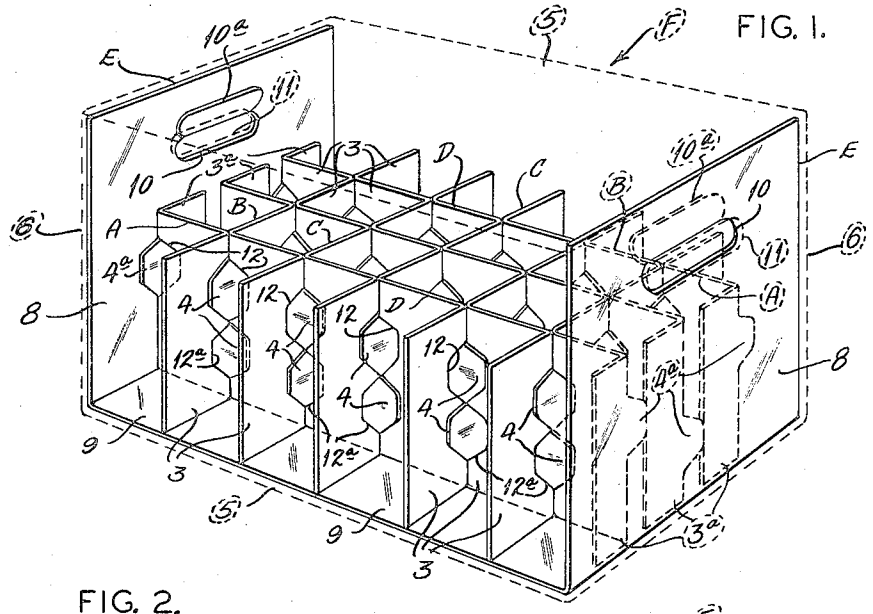
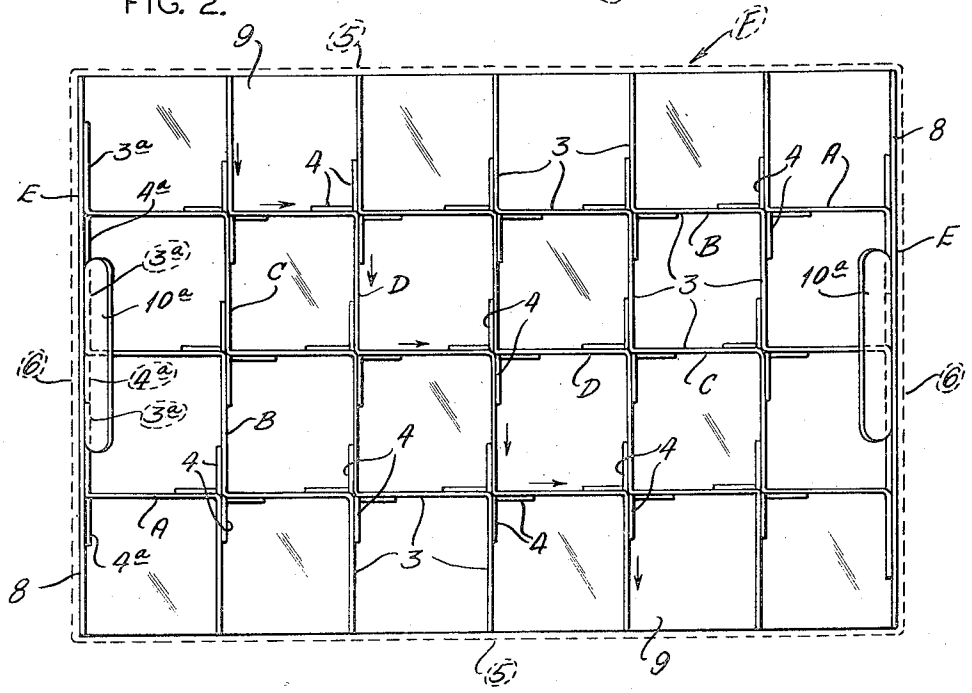


FIG. 2.



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FIG. 3.

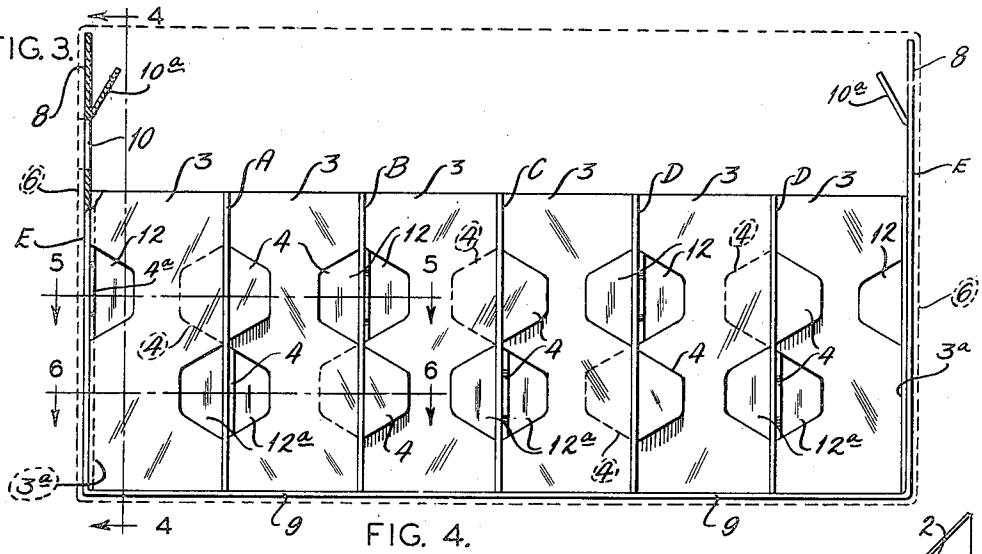


FIG. 4.

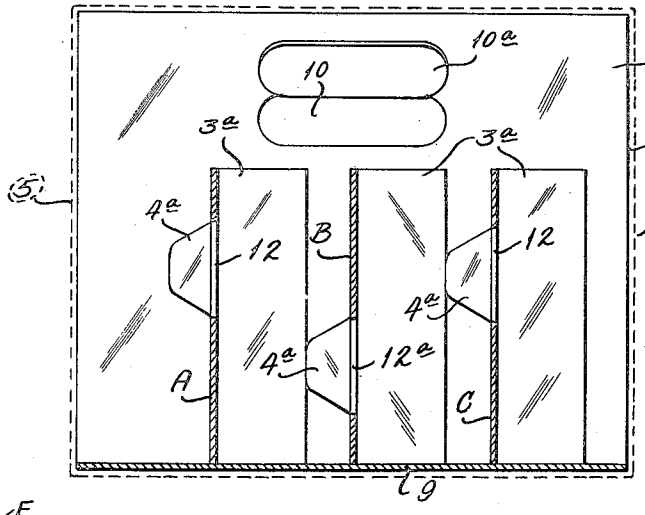


FIG. 10.

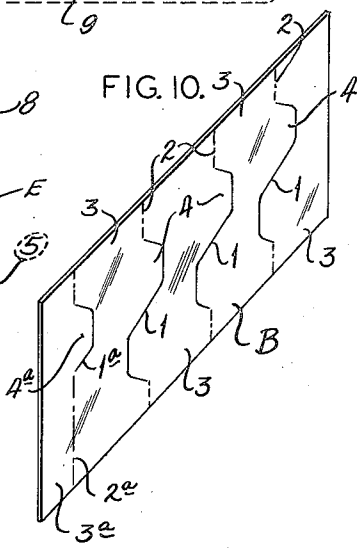


FIG. 5.

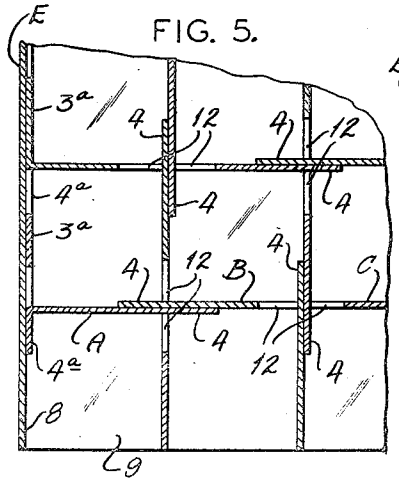
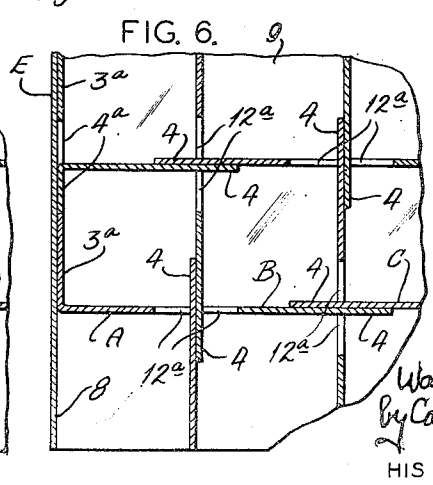


FIG. 6.



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FIG. 7.

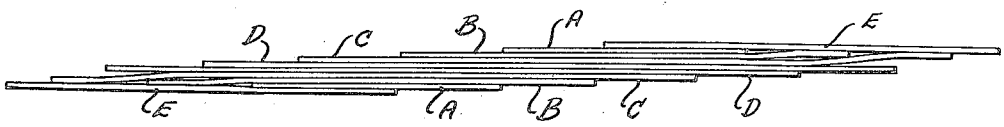


FIG. 8.

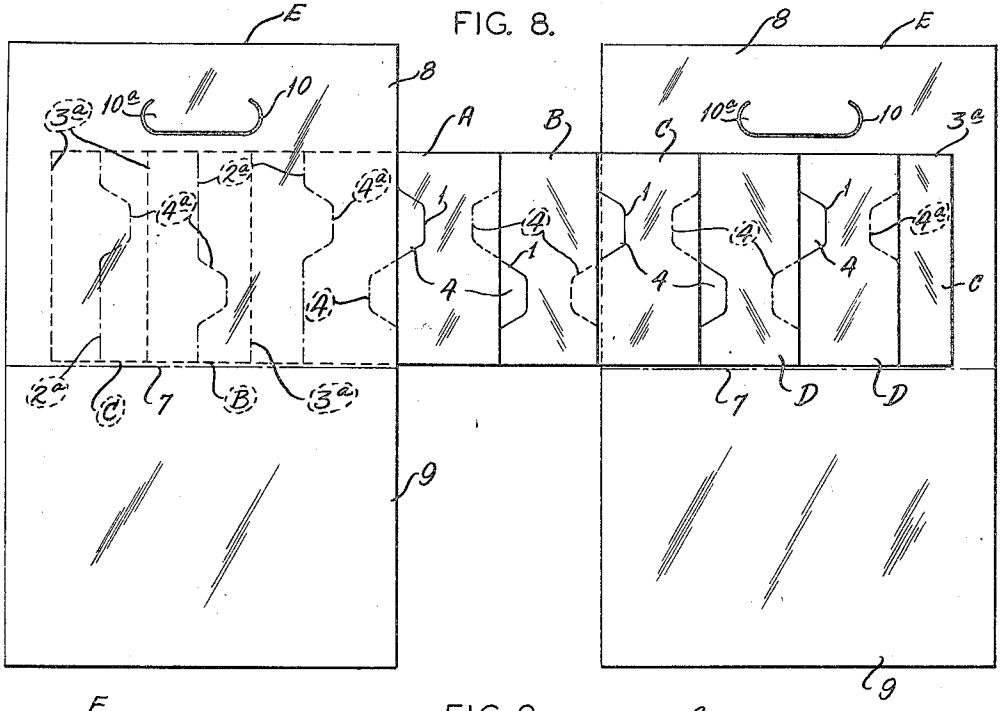
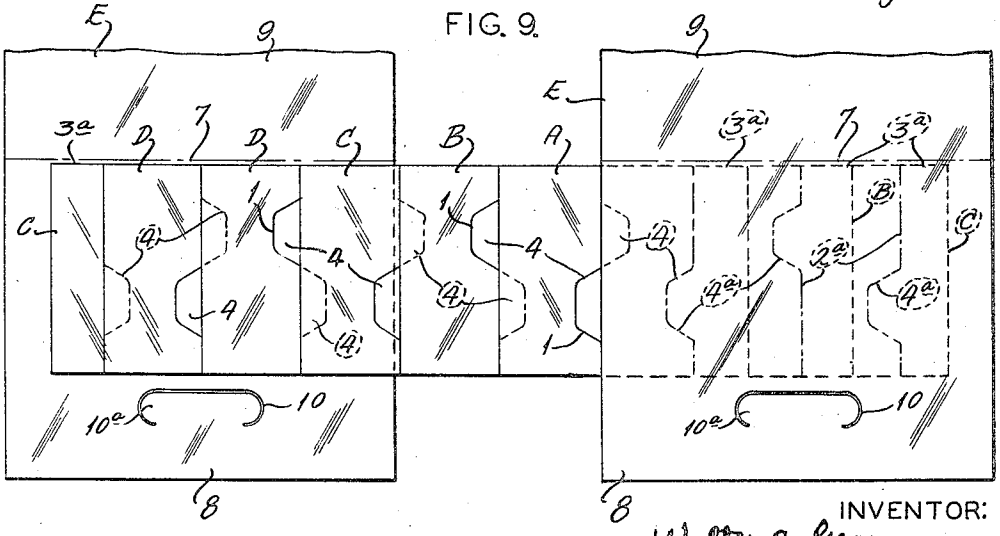


FIG. 9.



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UNITED STATES PATENT OFFICE

2,549,801

COLLAPSIBLE CONTAINER PARTITION AND LINER UNIT

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Application October 6, 1947, Serial No. 778,169

2 Claims. (Cl. 229—42)

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This invention relates to partitions for containers, particularly collapsible strip type partitions of the kind that are adapted when opened or set-up to form a series of cells or compartments for bottles or other articles.

The invention has for its principal object to provide a partition of the above type having liner members for the side walls and/or bottom of the container. Another object is to provide a collapsible partition and liner unit which may be stored or shipped in flat compact form and readily set up and mounted in the container. Other objects are to provide for quickly and easily securing the parts together without the use of stitching or mechanical fasteners, to provide for cross ventilation through the cells and to provide for increased strength and durability and simplicity and cheapness of construction. The invention consists in the collapsible container partition and liner unit and in the construction, combinations and arrangements of parts hereinafter described and claimed.

In the accompanying drawings, which form part of this specification and wherein like symbols refer to like parts wherever they occur,

Fig. 1 is a perspective view of a collapsible container partition and liner unit embodying my invention, the unit being shown set up in a container indicated in dotted lines,

Fig. 2 is a top plan view of the parts shown in Fig. 1,

Fig. 3 is a side elevational view of the set-up unit,

Fig. 4 is a vertical cross-sectional view on the line 4—4 in Fig. 3,

Figs. 5 and 6 are fragmentary horizontal sectional views on the lines 5—5 and 6—6, respectively, in Fig. 3,

Fig. 7 is a side edge view of the collapsed partition and liner unit,

Figs. 8 and 9 are plan views looking at opposite sides of the collapsed unit; and

Fig. 10 is a perspective view of one of the partition strips.

The twenty-four cell collapsible container partition and liner unit shown in the accompanying drawings, comprises two counterpart partition strips A, two counterpart partition strips B, two counterpart partition strips C, two counterpart partition strips D and two counterpart liner members E, all made of corrugated board, fiberboard or other bendable material. All of the partition strips are of the same width but increase in length from the strips A to the strips D. All of the partition strips are provided with one or more

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substantially S-shaped cross slits 1 and cut cross scores 2 extending from the ends of said slits to the opposite side marginal edges of said strips, thereby forming two or more cross panels 3 in all of said strips depending on the length thereof. The reverse loops of the ends of the S-shaped slits 1 of the partition strips form tongues 4 on adjacent edges of the panels 3 thereof, adjacent tongues being offset crosswise of said strips. At one end, the partition strips A, B and C are provided with end panels 3*a* formed by substantially C-shaped cross slits 1*a* and cut cross scores 2*a* that extend from the ends of said slits to the opposite side marginal edges of said strips. The slits 1*a* form tongues 4*a* on the inner edges of the panels 3*a* at one end of the strips A, B and C.

The partition strips are assembled by stacking or laying them flatwise one on another with the strips A located one at the top and the other at the bottom, the two strips B located next to each strip A, the two strips C located one next to each strip D and the two strips D located next to one another and next to the strips C. The partition strips are offset lengthwise in the stack with their transverse score lines in register vertically. The strips of each pair A, B, C and D are reversed so that the corresponding tongues of the adjacent strips extend in opposite directions. With the strips thus arranged, the tongues 4 of each strip are adhesively or otherwise permanently secured flatwise to the strip or strips in contact therewith, the tongues of each of the intermediate strips B, C and D being secured in alternation lengthwise first to one and then to the other strips in contact with opposite sides thereof.

Each of the two liner members E of the container partition and liner unit is of rectangular shape and of a width corresponding substantially to the distance between two opposite side walls 5 of the container or carton F for which the unit is designed; and the length of each of said liner members corresponds substantially to the inside depth of said container plus one-half the distance between the two other opposite side walls 6 thereof. Each of the liner members E is divided by a transverse score line 7 into a side wall liner panel 8 and a bottom liner panel 9. As shown in the drawings, the side wall liner panels 8 have elongated hand holes 10 therein adapted to register with similar hand holes 11 in the two opposite side walls 6 of the container, the hand holes 10 having flaps 10*a* along one longitudinal edge thereof.

The liner members E are preferably assembled with the partition strips by placing one liner

member at the bottom of the stack of strips at one end thereof with its side wall liner panel 8 disposed directly therebeneath and with its score line 7 extending along one longitudinal side edge of said stack and with its bottom liner panel 9 extending outwardly beyond said side edge. The other liner member E is similarly arranged on top of the stack of partition strips at the other end thereof. With the liner members E thus positioned in the stack, the side wall liner panels 8 are located opposite the end panels 3*a* of the strips A, B and C and these end panels, together with their tongues 4*a*, have a suitable adhesive applied to the outer faces thereof and are thus permanently secured flatwise to the inner faces of said side wall liner panels at the same time that the partition strips are secured together by the tongues 4 thereof.

The collapsed container partition and liner unit is adapted to be set up by simultaneously turning the two liner members E 90° in the same direction, thus bending all of the partition strips zigzag fashion at right angles along the score lines 2 and 2*a* thereof to form a series of cells or compartments. The bottom liner panels 9 of the liner members E are then bent inwardly towards each other into substantially edgewise abutting relation beneath the unfolded or set-up partition and thus close the bottoms of the cells therein. The set-up partition and liner unit is then placed within the container or carton F with the bottom liner panels 9 seated on the bottom of the container and with the side wall liner panels 8 seating against the two opposite side walls 6 thereof and with the hand holes 10 of said side wall liner panels in register with the hand holes 11 in said two opposite side walls of said container.

In the set-up position of the hereinbefore described partition and liner unit, the tongues 4 and 4*a* of the partition strips are not bent but remain in their original planes; that is, the plane of the panels from which they project. The tongues, however, are separated from the tongue forming slits 1 and 1*a* when adjacent panels of the partition strips are bent at right angles to one another into cell forming relation, thereby forming horizontal openings 12 and 12*a* through the panels 3 at the corners of the cells. The tongues are located at the corners of the cells and extend straight from one cell into the other through the openings 12 and 12*a* vacated by the tongues.

The hereinbefore described collapsible container partition and liner unit has several important advantages. It is simple and inexpensive and can be readily assembled in initial collapsed flat form for shipment or storage and may be quickly and easily erected or set up merely by turning or swinging the end panels 3*a* on the hinges formed by the end score lines 2*a* of the strips A, B and C until said members are brought into parallel relation. The tongues 4 of each partition strip are permanently secured flatwise to the strips in contact therewith and lie stiff and straight in the planes of the panels from which they project and against the panels to which they are connected, thereby increasing the strength and rigidity of the erected partition and preventing the strips from curling or bowing. The strips associated with the liner members E are also permanently secured flatwise thereto. The tongues reinforce and stiffen the cells at the corners thereof; and the openings 12 formed in the panels by the tongues struck therefrom provide both longitudinal and cross ventilation through the set-up partition.

The side wall liner panels 8 of the liner members E serve to stiffen and strengthen the corresponding side walls of the container; and the bottom liner panels 9 of said liner members extend beneath the set-up partition and close the bottoms of the cells thereof and also reinforce and stiffen the bottom of the container. These bottom liner panels also serve to cushion bottles or other breakable articles when they are dropped into the cells of the partition.

Obviously the hereinbefore described container partition and liner unit admits of considerable modification without departing from the invention. Therefore, I do not wish to be limited to the precise arrangements shown and described.

What I claim is:

1. A collapsible partition and liner unit for a container comprising a plurality of superimposed partition strips and liner members all initially connected together in flat form for movement relative to one another to bring said partition strips into position to form a plurality of cells and said liner members into position crosswise of the partition strips at two opposite sides of said partition in the cell forming position thereof to form liners for the corresponding side walls of said containers, said strips being provided with cross slits and cross score lines extending from the ends of said strips to the longitudinal side edges of said strips, said slits and score lines dividing said strips into a plurality of bendable cell forming cross panels with tongues and openings along the adjacent edges thereof, the tongues of each strip being secured flatwise to adjacent panels of the strip or strips in contact therewith and the endmost panels of some of the strips being secured flatwise to the inner faces of the liner members, said tongues being located adjacent to the corners of the cells in the cell forming position of said partition with the tongues of the cell forming panels extending straight through said openings from each cell into an adjacent cell.

2. A collapsible partition and liner unit for a container comprising a plurality of superimposed partition strips and liner members all initially connected together in flat form for movement relative to one another to bring said partition strips into position to form a plurality of cells and said liner members into position crosswise of the partition strips at two opposite sides of said partition in the cell forming position thereof to form liners for the corresponding side walls of said container, said strips being divided into a plurality of bendable cell forming cross panels with tongues and openings along the adjacent edges thereof, the tongues of each strip being secured flatwise to adjacent panels of the strip or strips in contact therewith and the endmost panels of some of the strips being secured flatwise to the inner faces of the liner members, said tongues being located adjacent to the corners of the cells in the cell forming position of said partition with the tongues of the cell forming panels extending straight through said openings from each cell into an adjacent cell.

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