

Dec. 5, 1961

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3,011,672

GLUED CELL FORMING DIVIDER

Filed May 28, 1958

2 Sheets-Sheet 1

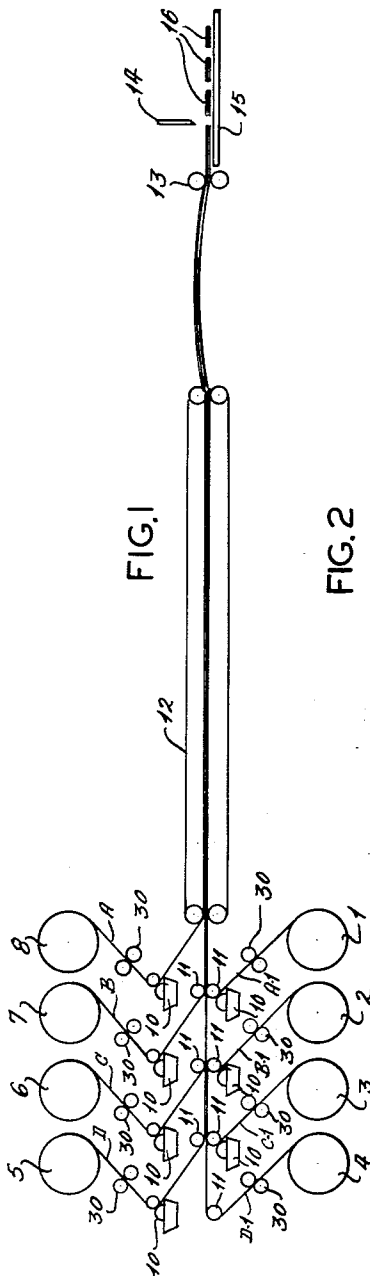


FIG. 1

FIG. 2

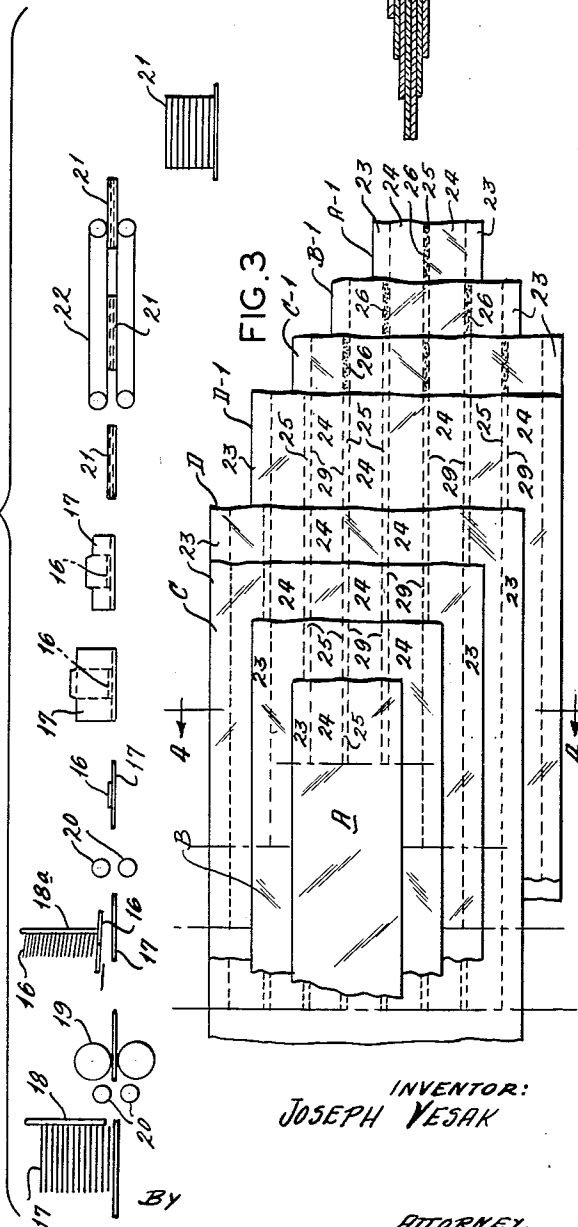


FIG. 2

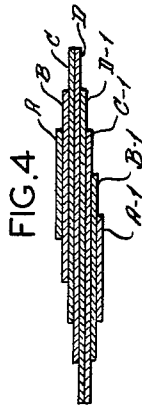


FIG. 3

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FIG. 5

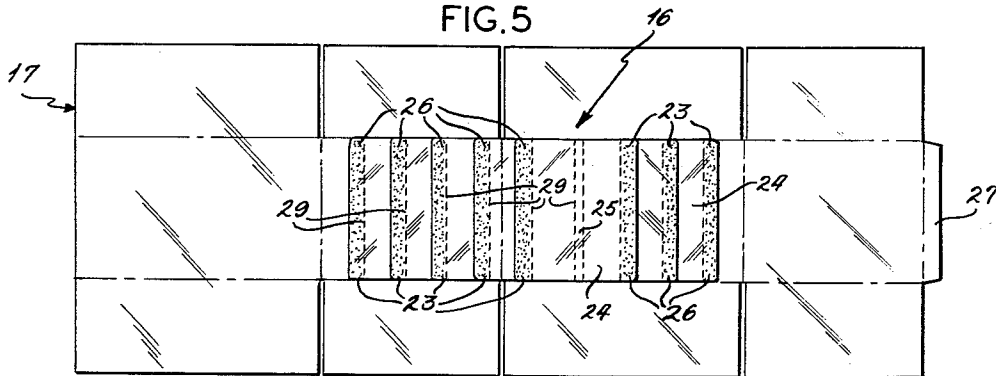


FIG. 6

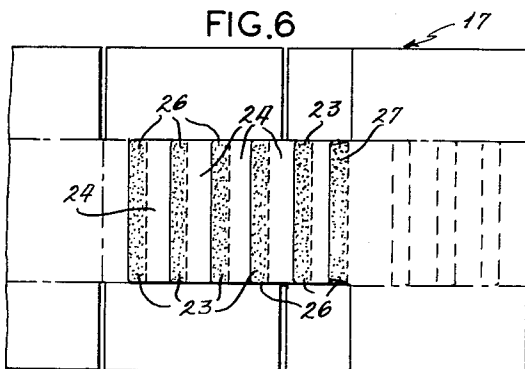


FIG. 7

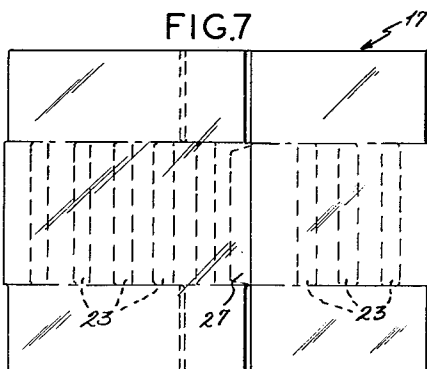


FIG. 9

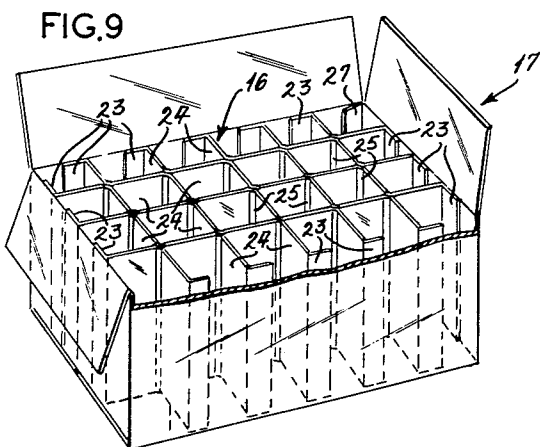


FIG. 10

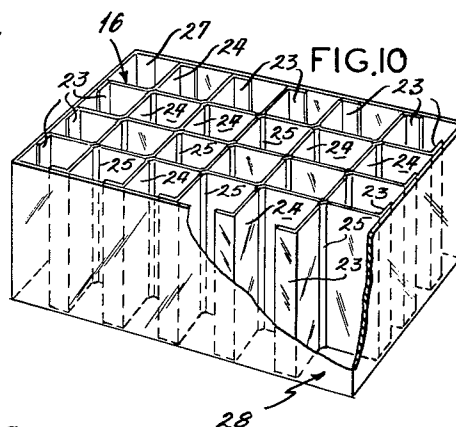
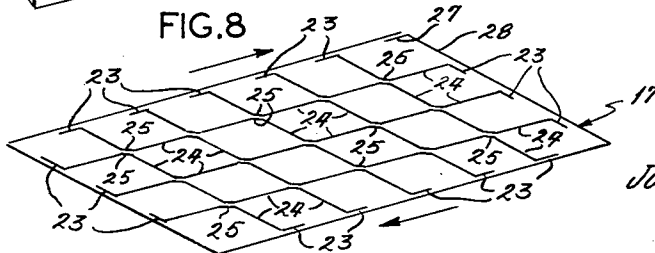


FIG. 8



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GLUED CELL FORMING DIVIDER

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2 Claims. (Cl. 217-30)

The invention relates to a collapsible strip type cellular partitioning and compartment forming device for corrugated and solid fibreboard containers which divides the container into a plurality of substantially similar shaped cells for packaging and shipping fragile articles such as beverages packed in glass containers and the like.

More specifically the present invention pertains to a strip or web type cellular partitioning means comprising a plurality of interconnected planar or plate-like partition forming webs, preferably of equal height, arranged in their collapsed state, in partially offset face to face contacting relation, each web being divided by equally spaced apart longitudinal parallel lines of weakness into relatively narrow and relatively wide portions. The said webs are secured together by adhesive applied to alternate narrow portions of each web and the longitudinal side margins of each web have tab defining lines of weakness. The partition may be secured to the interior faces of the walls of a slotted carton by glue applied to said tabs on the side margins of each web or to the interior faces of a liner adapted to be dropped, with the partition device attached, into the container, the partitioning means when the container is erected, dividing the container or the liner therefor into a predetermined number of similar shaped cells.

An object of the invention is to provide a strong durable strip type partitioning means comprising at least two plate-like partition forming members each divided by parallel longitudinal scores into relatively wide and relatively narrow portions, the strip like members being interconnected by adhesive applied to alternate relatively narrow portions of each strip. The partition may be shipped in collapsed form and readily opened into cell forming position at the point of use.

Another object is to provide a partition and compartment forming device which comprises interconnected entire and planar or plate-like partition forming members, preferably of equal height, positioned in flatwise partially offset contacting relation in the collapsed form and which may be moved from the collapsed position to the erected position wherein said interconnected members become positioned at right angular cell forming relation to each other.

Another object of the invention is to provide a collapsed strip type partition and compartment forming device secured to the inner walls of a regular slotted container or a liner for the container, the device consisting of not less than two strips or webs of paperboard in flatwise partially overlapping relationship, each of said strips being divided into equally spaced apart relatively wide planar portions and relatively narrow portions by pairs of longitudinal parallel lines of weakness, with tabs on the side margins of said strips. The strips are secured together by glue or other means applied to alternating relatively narrow portions of each of said webs and to the inner face of the container or "drop in" liner by glue or other means applied to said tabs.

The invention comprises a collapsible partition compartment forming device formed of a plurality of plate-like strips or webs of equal height arranged in face contacting relation divided by longitudinal parallel lines of weakness into relatively wide partition forming portions of one of said strips being secured by adhesives or other

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suitable means to like portions of alternating strips whereby, in the operating position of said partition, the relatively wide portions thereof become positioned at right angles to each other and the relatively narrow portions diagonally disposed to said wide portion.

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

FIG. 1 is a diagrammatic side elevation of an apparatus for forming partitions in a continuous process;

FIG. 2 is a diagrammatic side elevation of an apparatus which may be used to assemble and secure the partitions into the container blanks;

FIG. 3 is a fragmentary plan view of eight superimposed webs for forming a twenty-four cell partition, the webs being shown in partially offset top to bottom order as they occur in the collapsed partition;

FIG. 4 is a side elevation of the eight webs shown in FIG. 3;

FIG. 5 is a plan view of a collapsed partition placed on a container blank preparatory to assembly;

FIG. 6 is a plan view of the partition and container blank of FIG. 5 showing the first step in their assembly;

FIG. 7 is a plan view of the completely fabricated collapsed container and attached cellular partition;

FIG. 8 is a diagrammatic perspective view of the relation of the partition forming strips and the container side walls;

FIG. 9 is a perspective view partially broken away of the completely assembled container and partition embodying the twenty-four cell embodiment of the invention; and

FIG. 10 is a perspective view partially cut away of the partition assembled in a container "drop in liner."

The glued cell forming divider or partition in opened up cell forming position attached to the inner face of the walls of a slotted carton is shown in perspective in FIG. 9, while the divider or partition device attached to the inner faces of a liner's walls adapted to be dropped into a regular slotted carton is illustrated in FIG. 10.

The novel divider or partition is formed by transversely severing a continuous face to face assembly of counterpart pairs of face to face strips or webs of varying widths arranged in partially offset relation as shown in the plan view of FIG. 3 of the drawings and the side elevation of FIG. 4.

A schematic view of one means of forming the partition is illustrated in FIG. 1 wherein pairs of counterpart webs A and A-1, B and B-1, C and C-1, D and D-1 are drawn from rotary, spaced supply rolls 1 to 8 inclusive. The webs pass from the supply rolls through suitable scoring rolls 30, glue fonts 10 and tension rolls 11, into a relatively long pressure section 12, where the alternating adjacent webs are permanently adhesively secured together at the equally spaced relatively narrow longitudinal portions 25 hereinbefore described. After the pressure section, the webs are allowed to accumulate slack before passing through an intermittent rotary feeding means 13 to a knife 14 where the webs are severed transversely at spaced intervals equal to the desired cell height, forming the completed collapsed partitions 16.

FIG. 2 is a schematic illustration of a method which may be employed for assembling the cartons 17 and the completed partitions 16. The cartons 17 are fed from a carton storage facility 18 through an adhesive application cylinder 19 where adhesive is applied to the blank. Glue font 20 applies adhesive to the cylinder 19.

The carton is then passed under a partition storage facility 18a from which a collapsed partition is deposited on the glued carton blank in proper registering relation. The carton blank 17 is then folded to form the assembled container 21 in knocked down flat form, the assembled

container 21 then goes through a suitable squeeze roll section 22, thence to a bundling station.

The partition device may consist of one pair of said juxtaposed partially offset webs for forming a four cell partition, such as for example, the A and A-1 strips, or a plurality of counterpart pairs of webs.

In the embodiment of the invention illustrated in the drawings, eight counterpart strips or webs are employed which forms a twenty-four cell partition for attaching in collapsed form to the walls of a container.

Each of the webs are divided into relatively wide portions 24 and relatively narrow portions 25 by parallel equally spaced apart scores or other forms of lines of weakness, 29. Each of the webs also have marginal gluing tabs 23 defined by lines of weakness for securing in right angular relation to the inner faces of the container or liner. As best shown in FIGS. 3 and 4, the eight webs increase in width from web A to web D and from web A-1 to web D-1. The web A is located at the top and A-1 at the bottom of the assembly, each web offset laterally by the width of a major portion 24 defined by the parallel scores and with the parallel scores in vertical alignment.

Prior to the assembly of the webs glue is placed on the relatively narrow portions 25 and then pressure applied to the assembly to secure the strips in the position relative to each other as shown in FIGS. 3 and 4. It should be understood that the fragmentary illustration of FIG. 3 shows the manner of assembling the eight counterpart webs in a continuous operation. The continuous assembly of the counterpart pairs of webs is transversely severed at spaced intervals corresponding to the desired height of the partitions. The collapsed partition thus formed may be positioned and secured to the walls of a container blank as illustrated in the progressive folding of the container blank and collapsed partition positioned thereon with glue, 26 on the right angularly folded tabs 23 (FIGS. 5 and 6) to the completely collapsed form shown in FIG. 7 ready for shipment. Perspective views 9 and 10 show the container and liner respectively opened into rectangular form with the partition forming twenty-four rectangularly shaped cells, secured to the inner face of the walls.

The inter-relation of the severed webs of the assembly is shown in the perspective drawing FIG. 8 at certain stages of the erection or collapsing of the container. It will be noted that the relatively narrow portions of each of the webs 25 to which the glue 26 is applied are in parallel relation to each other and in diagonal relation to the relatively large portions 24 of the webs which form the vertical planar, entire walls of the partition. This same diagonal relationship of the narrow portions 25 to the right angular portions 24 is also shown in FIGS. 9 and 10.

The hereinbefore described collapsed container having integral partitions has several important advantages. First of all it is simple and inexpensive and may be shipped and stored in preassembled condition collapsed form. Furthermore, economics are realized through the speed of manufacture and eliminates the need of the usual labor employed to hand position partitions into containers.

While I have shown and described a twenty-four cell partition, partitions may be made with varying numbers of cells. For instance, a simple four cell carton could be made from two webs like the upper and bottom webs A and A-1 shown hereinbefore.

Obviously, the hereinbefore described carton and partition members may be embodied in other forms and the above is illustrative only and not restrictive.

I claim:

1. A collapsible partition assembly having right angular cells and angularly disposed narrow adhesive strips comprising a plurality of superposed pairs of webs of equal height of flexible material, each web divided transversely intermediate its length by the adhesive strips defined by spaced pairs of parallel lines of weakness separating the ends of at least two counterpart entire, planar partition cell wall forming portions with relatively narrow tabs defined by a single line of weakness hinged to each end of each web, the pairs of webs differing from each other in length by the length of at least one cell wall forming portion, the pair of greatest length being positioned at the center of the assembly, the webs thereof being offset laterally from each other by the length of one said cell wall forming portion, a web of each remaining pair disposed on either side of the central pair in the order of their decreasing length, the shortest webs having at least one set of said parallel lines of weakness defining said adhesive strip which is in juxtaposed relation to the parallel lines of weakness of the adjacent web, the webs of the assembly being secured together by the adhesive strips glued in face contact, the cell wall forming portions of the webs folded on the contiguous line of the parallel lines of weakness into right angular relation to each other, the glued strips being in diagonal relation to the cell walls and parallel to each other, and of sufficient width to ensure permanent bonding thereof.

2. A collapsible partition assembly having right angular cells and angularly disposed narrow adhesive strips comprising a plurality of superposed webs of equal height of flexible material, each web divided transversely intermediate its length by the adhesive strips defined by spaced pairs of parallel lines of weakness separating the ends of at least two entire, planar partition cell wall forming portions with relatively narrow tabs defined by a single line of weakness hinged to each end of each web, an adjacent pair of webs differing from each other in length, the web of greatest length being positioned at the center of the assembly, the webs thereof being offset laterally from each other by the length of one said cell wall forming portion, each remaining web disposed on either side of the central web in the order of their decreasing length, the shortest webs having at least one set of said parallel lines of weakness defining said adhesive strip which is in juxtaposed relation to the parallel lines of weakness of the adjacent web, the webs of the assembly being secured together by the adhesive strips glued in face contact, the cell wall forming portions of the webs folded on the contiguous line of the parallel lines of weakness into right angular relation to each other, the glued strips being in diagonal relation to the cell walls and parallel to each other, and of sufficient width to insure permanent bonding thereof.

References Cited in the file of this patent

UNITED STATES PATENTS

289,010	Lynam	Nov. 27, 1883
380,960	Walker	Apr. 10, 1888
2,142,463	Upson	Jan. 3, 1939
2,332,287	Zalkind	Oct. 19, 1943
2,493,032	Rheinfrank	Jan. 3, 1950
2,502,117	Anderson	Mar. 28, 1950
2,549,802	George et al.	Apr. 24, 1951
2,670,026	Ungar	Feb. 23, 1954
2,706,935	Pasjack	Apr. 26, 1955
2,734,843	Steele	Feb. 14, 1956