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R. E. PAIGE

2,563,132

PACKAGING MEMBER

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Fig. 1.

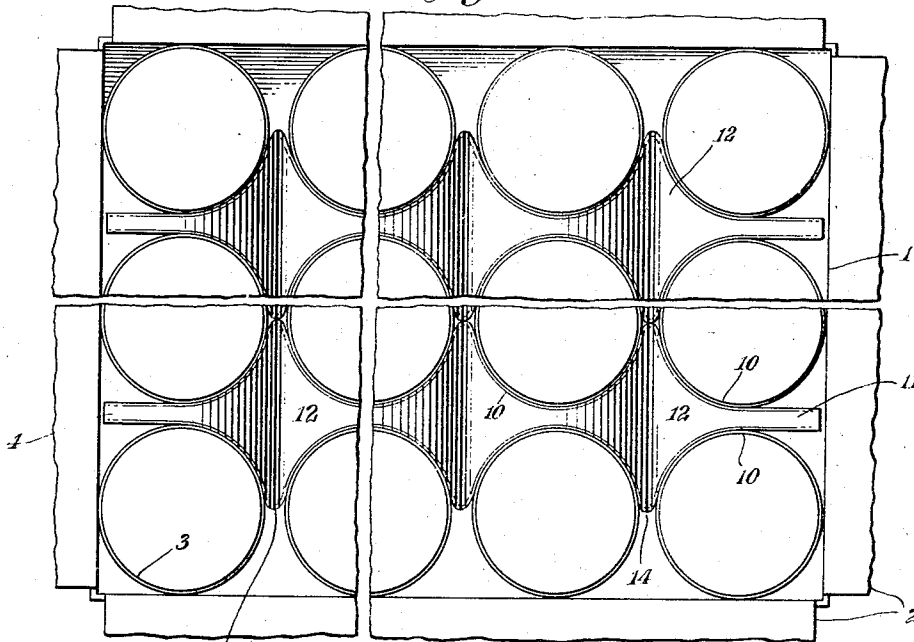


Fig. 2.

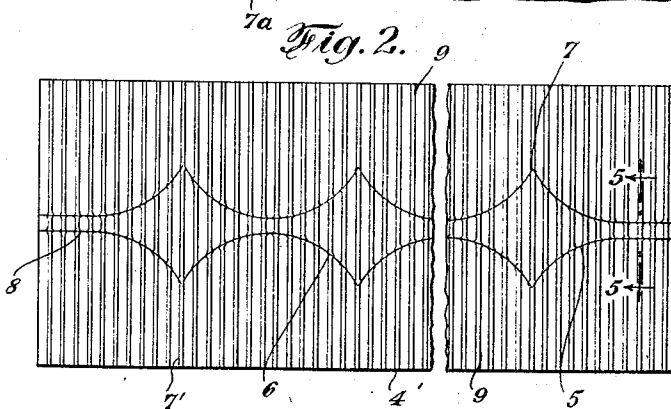


Fig. 3.



Fig. 4.

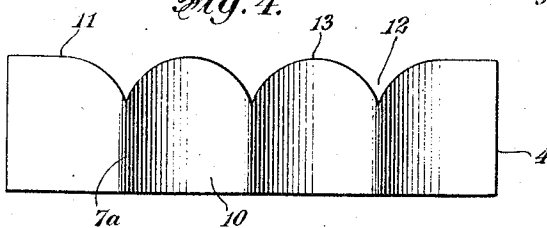


Fig. 5.

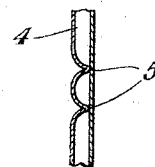
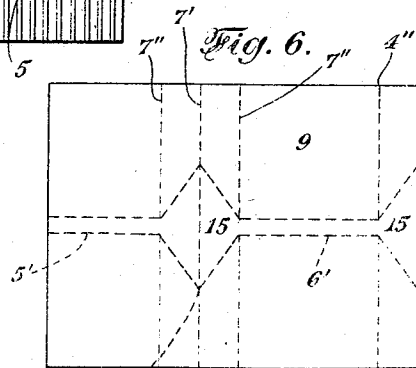


Fig. 6.



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PACKAGING MEMBER

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This invention relates to improvements in packaging members; and particularly a member for dividing the interior of a container into compartments or pockets for various objects to be stored or shipped.

An object of the invention is to provide a member adapted to serve as a partition in a carton or the like, and having such formation as to occupy a minimum of space when stacked; but so constructed that it can be easily and quickly set up in operative position with respect to the container which is to receive it.

Another object is to provide such a member constructed entirely of sheet material and having initially the shape of a flat blank with scored lines in the surface thereof, delineating portions to form the pockets; and capable of being folded and bent along said lines to give the finished product.

Another object is to provide such a member by fashioning a blank having the necessary outline or shape, out of sheet material that is flexible in character; hence the parts can be readily adjusted for practical use; and, further, when the blank is folded to move all parts into their proper final positions, said parts take on a reinforcing effect that gives full strength and sufficient rigidity to enable them to offer most effective resistance to any force, such as a jar or shock, that might bring about a collision between the objects which said member is designed to protect against such impacts, and thus eliminate all risk of breaking, abrading and other damage.

The nature of the improvement and additional objects and advantages thereof are made clear in the following description, and the drawings that accompany same. But only one embodiment is disclosed, and I reserve the right to make changes without deviating from the principle of the invention or departing from the essential construction in which the invention resides, and having the characteristics defined in the appended claims.

On the drawings,

Figure 1 is a top view of a container, such as a box or carton, having a partition member therein according to this invention, of a design to engage and separate all kinds of objects.

Figure 2 shows in plan a blank of sheet material out of which said member is formed.

Figure 3 shows part of said sheet in edge view.

Figure 4 is a side view of said member when completed.

Figure 5 is a section on line 5—5 of Figure 2; and

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Figure 6 is a view similar to Figure 2 illustrating a modification of square objects.

Partitions for boxes and cartons wherein jars, bottles and other articles are packed are often made of strips of cardboard and other material running lengthwise and across the container, to form pockets or compartments, each to receive a single one of said articles to isolate it and protect it from the others. The separate strips have transverse slits in their longitudinal edges so that they can be assembled to form a reticulated unit. Such units can be collapsed and stored away, but in that state they each present several layers in thickness, and occupy a great deal of space, especially when they are handled in stacks.

My invention obviates this disadvantage because the partition member is fashioned out of a single layer of sheet material and has originally the form of a flat blank of only one layer in thickness. It is appropriately scored with lines or creases to define parts which enable the blank to be bent into the configuration which assures the results desired. The device is thus simple, effective and quite inexpensive, can be instantly set up by any shipping room clerk, and requires a minimum of space for stacking and storing.

The numeral 1 indicates a packing box or carton of any approved construction. To the peripheral edges of the top are hinged covers 2 for closing it. Inside are the objects 3, such as jars, bottles, golf balls or other articles, all segregated from one another. The members for dividing the box into isolated spaces for said objects are indicated at 4, all extending in one direction only, with lateral ribs 7 and reentrant portions or cavities between said ribs, each to receive one of said objects and prevent knocking against any other.

The member 4 is fashioned out of a blank 4' of sheet material such as corrugated or plain cardboard, the corrugated variety consisting of a flat sheet and a transversely pleated sheet adhesively secured together. On the corrugated side it is scored along two broken lines 5, one on each side of the middle. These lines are successive curved arcs 6, presenting their convex sides towards each other, and united at their ends to form oppositely pointing salients 7, in pairs, the salients of each pair being in transverse alinement. Adjacent the ends of the blank the lines 5 are straightened out into parallel portions 8.

This blank is manipulated to form the partition member 4 by grasping the ends of the lines 8

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and bending it along said lines at these portions. The ends are then pushed towards each other, and the blank is thus bent further along the arcs 5 and the transverse lines 7' at the points of the salients. As the parts of the blank along each side of the middle are bent further the parts 9 between the salients 7 fold inward along the lines 7' and downward along the arcs 6 to present concave or reentrant portions 10, constituting recesses or cavities in both sides of the member 4. The strips 9 along the sides bent along transverse lines 7' which meet the extremities of the salients 7 also form reenforcing ribs 7a. In final shape the member has the appearance shown in Figures 1 and 4. The strip between the arcs 6 forms a ridge 11 along the top, but this ridge has indentations 12, each of the lines 7' extending entirely across the blank 4 and the salients having their extremities in these lines. The bottoms of these indentations coincide with the tops of the adjacent ribs 7a. The ridge between the indentations or undulations is made of successive arched surfaces or convex portions 13, which are wide between the ribs and narrow between the inner ends of the reentrant portions 10, and when viewed in plan, have the shape indicated in Figure 1, with points or cusps 14 at the upper ends of the ribs 7a.

When inserted into a packing box the partition members are arranged in the manner laid out in Figure 1. The members 4 all extend in one direction; no transverse members are needed because the same purpose is served by the ribs 7a. The ribs 7a of one member are all in crosswise alinement with the ribs of every adjacent member, and the respective reentrant portions 10 of adjacent members are also opposed to each other. Each pair of opposed recesses thus forms a separate pocket or compartment for one of the articles 3.

As illustrated in Figure 1, two members 4 are sufficient for three rows of packed articles 3, each row containing as many articles as the members 4 permit. These members can of course be made with as many ribs 7a and cavities 10 as required.

This design of partition member thus gains completely all of the objects of the invention. When first made, the blank is perfectly flat and can be stacked in a very small space. When wanted it can be set up and placed in a box at a moment's notice. The price of material is low and the blank can be made in large quantities by machine instead of hand labor for cutting and slotting. When finished they can be processed by an automatic folder, which loosens the blanks along the score lines, and makes subsequent setting up quick and easy. They are meanwhile stored away flat till needed. The full cost of production is far below that entailed in the manufacture of the conventional network partition units consisting of intersecting strips.

When set up, the member is both shorter and narrower than the original blank 4', as is plainly shown on Figures 2, 3 and 4.

Figure 6 shows a modified form wherein the two score lines 5' on the blank 4'' are made up to include straight parallel portions 6', joined at their ends by diagonal converging score lines which mark off triangular salients 7b. When folded this blank will present ribs extending down from the ends or points of the salients. The ribs will be tapering in cross section or decreasing in thickness as before, but the reentrant portions will be made up of flat faces at the inner ends and sides instead of a single concave face. To form these cavities the blank is bent along the lines 7' at the

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points of the salients and 7'' at the bases thereof. Also, the top will have a ridge with undulations or indentations, but the ridge will have horizontal straight portions instead of arches between the indentations. The latter will consist of two inclined triangular sides, intersecting in the line 7' joining the tops of two ribs on opposite sides or faces of the member. This member can be made, set up, and put into a box in the same way as above set forth.

At the opposite sides of the box the objects 3 are made secure by fitting into one recess, being thus engaged snugly on one side by the member 4 and the inner surface of said side on the other.

Having described my invention, what I believe to be new is:

1. A member for engaging the exterior surfaces of objects to keep the latter separated, said member being of sheet material scored to mark out parts to form a longitudinal ridge with indentations, extending from end to end along the top of said members, ribs beginning at said ridge and extending laterally and vertically therefrom, said ribs being in transverse alinement with said indentations, and uncut reentrant portions substantially perpendicular to the top between said ribs to receive said objects, said member when set up having less length and width than said sheet.

2. A member for engaging the exterior surfaces of objects to keep the latter separated, said member being of sheet material scored to mark out parts to form a longitudinal ridge with indentations, extending from end to end along the top of said member, ribs beginning at said ridge and extending laterally and vertically therefrom, said ribs being in transverse alinement with said indentations, and uncut reentrant portions substantially perpendicular to the top between said ribs to receive said objects, said member when set up having less length and width than said sheet, said ribs decreasing in thickness from said ridge toward their outer edges.

3. A member for engaging the exterior surfaces of objects to keep the latter separated, said member being of sheet material scored to mark out parts to form a longitudinal ridge with indentations, extending from end to end, along the top of said member, ribs beginning at said ridge and extending laterally and vertically therefrom, said ribs being in transverse alinement with said indentations, and uncut reentrant portions substantially perpendicular to the top between said ribs to receive said objects.

4. A member for engaging the exterior surfaces of objects to keep the latter separated, said member being of sheet material scored to mark out parts to form a longitudinal ridge with indentations, extending from end to end, along the top of said member, ribs beginning at said ridge and extending laterally and vertically therefrom, said ribs being in transverse alinement with said indentations, and uncut reentrant portions between said ribs to receive said objects, said ribs decreasing in thickness from said ridge toward their outer edges.

5. A partitioning member comprising a blank of sheet material scored to form, when folded, a series of recesses on opposite sides and an undulating ridge along the top, the sides being uncut and of material height relative to the width of the top, and substantially perpendicular to said top.

6. A partitioning member comprising a blank of sheet material folded to form two opposed walls and a relatively narrow wall uniting same, said opposed walls being uncut and presenting

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cavities substantially perpendicular to said narrow wall, and said uniting wall being made up of a series of indentations with the bottoms of said indentations in line with the sides of said cavities.

7. A partition member comprising a structure having two uncut separated walls joined by a central ridge with undulations, the low points of which extend outwardly from said ridge and being higher than the width thereof, the walls having ribs on both sides of the ridge; said ribs being integral with said ridge and being substantially perpendicular to said undulations.

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