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CARTON SPACERS

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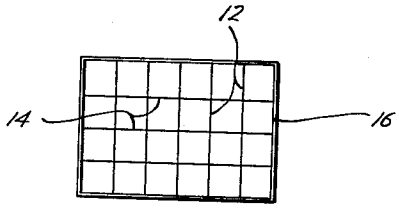


Fig. 1

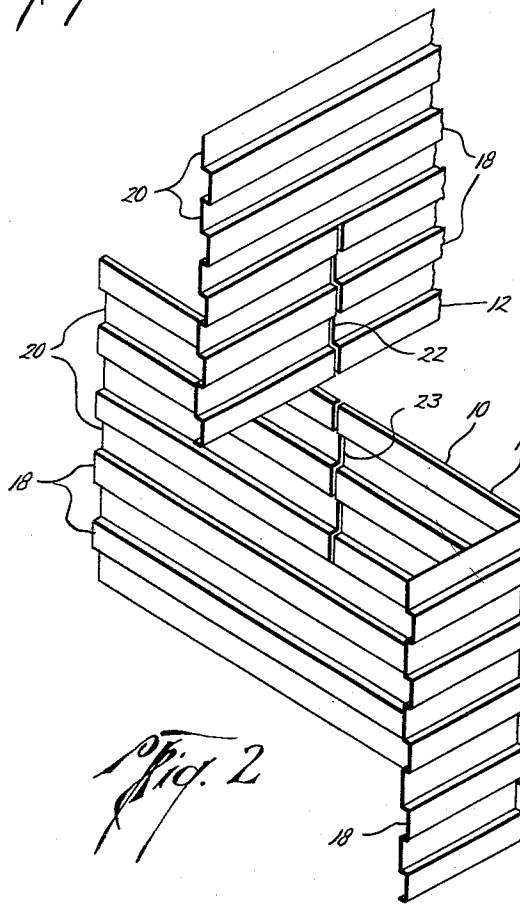


Fig. 2

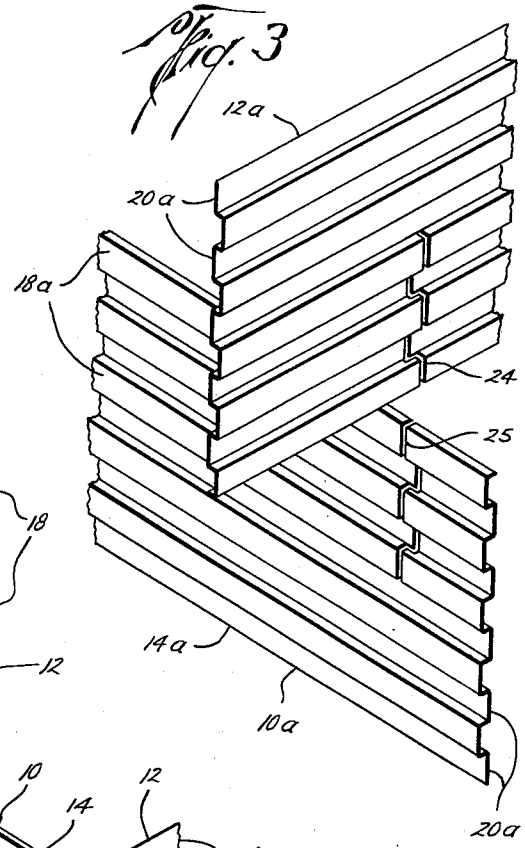


Fig. 3

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CARTON SPACERS

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The present invention relates to carton spacers, and more particularly, relates to interlocking carton spacers for dividing cartons into individual compartments or cells for the reception and storage of bottled containers and the like.

Generally carton spacers in use today consist of cardboard partitions which are joined together by slots cut halfway through each partition. These partitions are subject to becoming unjointed, losing their shape, quickly deteriorating when subject to moisture and thus generally requiring replacement after a short period of use. These disadvantages have been further magnified in view of the automatic bottle packaging machinery in use, particularly in the beer and soft drink industries, which require the spacers to be accurately and securely placed in the cartons. It is to overcome these disadvantages that the present invention is directed.

It is an object of this invention to provide an interlocking carton spacer which may be quickly assembled and will remain securely interlocked.

A further object of the present invention is the provision of an interlocking carton spacer which is interlocked along the entire line of intersection of the partitions.

Yet a still further object of the present invention is the provision of an interlocking carton spacer comprising a rubber or plastic material which will be weather resistant.

Another object of the present invention is the provision of an improved interlocking carton spaced which keeps its shape so that bottles may be placed in the carton by an automatic assembly line machine, has a long life and is simple and inexpensive.

Other and further objects, features and advantages will be apparent from the following description of presently preferred embodiments of the invention, given for the purpose of disclosure, and taken in conjunction with the accompanying drawing, where like character references designate like parts throughout the several views, and where

FIGURE 1 is a top elevational view illustrating an apparatus according to the present invention in use with a conventional carton,

FIGURE 2 is a perspective view, partly exploded, illustrating the intersection and interlocking of the apparatus according to the invention,

FIGURE 3 is an exploded perspective view illustrating a modification of the interlocking slots of the present invention.

Referring now to the drawing and particularly to FIGURES 1, 2, and 3, the reference numeral **10** generally designates the interlocking carton spacers of the present invention which include partitions **12** and **14** which intersect, interlock and form a plurality of cells when the carton spacer is positioned in a conventional carton **14** (FIGURE 1).

Referring now to FIGURES 2 and 3 the partitions or spacers **12** and **14** include a body which is comprised in cross-section of a series of channels or ribs **18** and **20** which are alternately reversed. Preferably, the spacers **12** and **14** are made out of a pliable plastic or rubber material which assists the interlocking connection as will be more fully described hereinafter and also provides carton spacers which are durable and waterproof.

As shown in FIGURE 2 each of the transverse and longitudinal partitions **12** and **14**, respectively, includes a slot **22** and **23**, respectively, which is cut from an outside edge to approximately the center of the crossing partitions. These slits or slots **22** and **23** allow the spacers **12** and **14** to be interconnected and joined perpendicularly to each other as is conventional. Although the straight slots **22** and **23** do not conform to the cross-section of the partitions **12** and **14** which they enclose, the flexibility of the material used allows a slight give in the coacting surfaces between the partitions **12** and **14** thereby allowing an interlocking action as the ribs or channels **18** and **20** coact with the ribs or channels **20** and **18**, respectively of the intersecting side and interlock with each other. After the joint has been assembled and interlocked, the spacers **12** and **14** are secured against release in all directions and the perpendicular position of intersection is maintained by the action of the cross-sectional area of channels **18** and **20** acting against the coacting side of the channels **20** and **18**, respectively, of the intersecting partition.

While the channels or ribs **18** and **20** may be of the same dimensions and still interlock due to the flexibility of the spacers, it may be desirable to make one of the ribs, say rib **18**, slightly smaller in cross-sectional width than the alternate ribs or channels **20** thereby insuring that the alternate ribs or channels will immediately interlock with each other. In either case the manufacturing expense is a minimum as each partition **12** and **14** are identical.

A modification of the present invention is illustrated in FIGURE 3 where the letter "*a*" is applied to the parts corresponding to those in FIGURES 1 and 2. The corresponding parts are the same as those in FIGURE 2 except that the slit or slots **24** and **25** are of a configuration to match the cross-section of the partition **14***a* or **12***a*, respectively, which it will receive and is thus formed of a series of alternately reversed channels. This modification will allow the spacers **12***a* and **14***a* to interlock in a tighter joint and thus will more securely hold the partitions in place and insure that the carton spacer **10***a* will maintain its shape which is of particular importance in the loading and unloading of bottles or other containers from the carton **16**.

In use, the transverse spacers **12** and the longitudinal spacers **14** are selected in length and width to fit the desired size carton and provide the number and size of container cells that are necessary. After the desired shaped slots **22**, **23** or **24**, **25** are provided, the spacers **12** and **14** are assembled quickly and easily by slightly opening the slots **22** and **23** or **24** and **25**, if used, edgewise and sliding the spacers together preferably at a small angle to each other. When the partitions **12** and **14** are fully meshed together in the slots **23** and **22**, respectively, or the slots **25** and **24**, if used, the partitions are then turned relatively to each other so as to be perpendicular to each other thereby allowing the ribs **18** and **20** of the intersecting partitions to interlock and secure the partitions in their proper perpendicular position with reference to each other and providing a simple inexpensive, but yet durable and securely interlocked carton spacer.

The present invention, therefore, is well adapted to carry out the objects and attain the ends and advantages mentioned as well as others inherent therein. While presently preferred embodiments of the invention are given for the purpose of disclosure, numerous changes in the details of construction and arrangement of parts may be made which will readily suggest themselves to those skilled in the art which are encompassed within the spirit of the invention and the scope of the appended claims.

What is claimed is:

1. An interlocking receptacle spacer comprising, a first partition, a second partition intersecting the first partition at right angles, the cross section of each partition including a series of alternately reversed channel shaped ribs, said ribs being perpendicular to the line of intersection of said partitions, each partition having a slot extending inwardly from the edge of each partition, said slots being shaped as the cross section of the partitions whereby when the first and second partitions are joined to each other the ribs on the first partition interlock with the ribs on the second partition at the intersection.

2. The invention of claim 1 wherein the spacers are comprised of a pliable material.

3. An interlocking receptacle spacer comprising, a first partition, a second partition intersecting the first partition, each partition being of a pliable material, the cross section of each partition including a series of alternately reversed channel shaped ribs, said ribs being perpendicular to the intersection of the first and second partitions, alternate ribs being slightly smaller in cross-sectional length than their adjacent ribs, each partition having a slot extending inwardly from the edge of each partition, said slot being shaped as the cross section of the partition whereby when the first and second partitions are joined to each other said ribs on the first partition interlock with the ribs on the second partition at the intersection thereby locking the first and second partitions securely together.

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