March 30, 1954 D. F. CUNNINGHAM 2,673,656

PARTITION LOCKING CONSTRUCTION

Filed Dec. 17, 1949

Fig. 1.

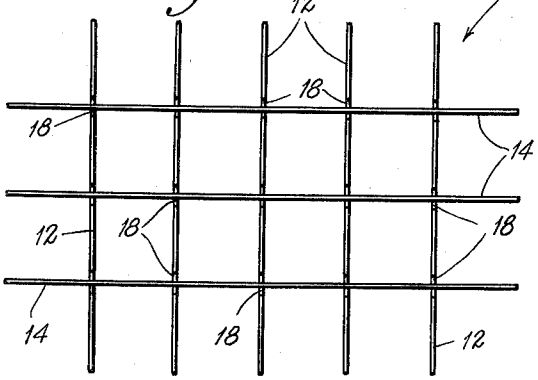


Fig. 4.

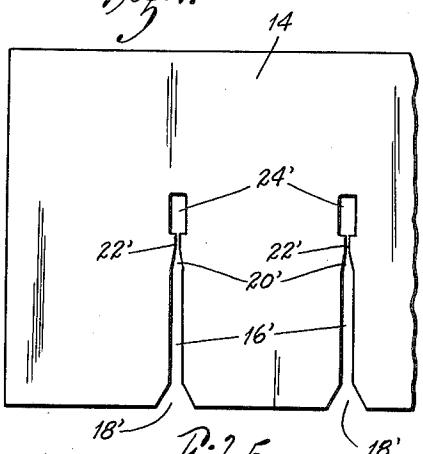


Fig. 2.

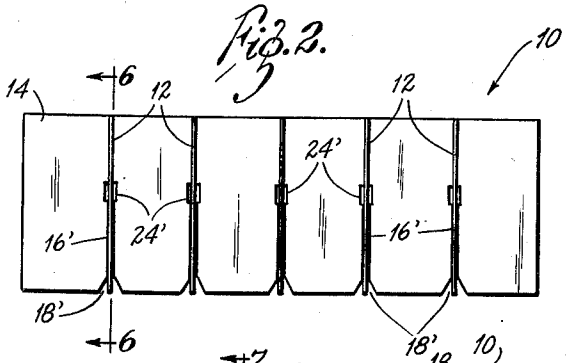


Fig. 5.

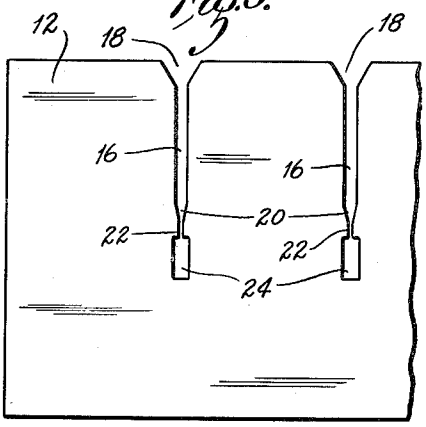


Fig. 3.

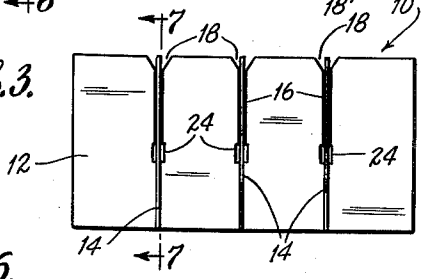


Fig. 7.

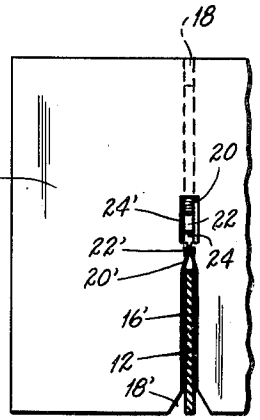


Fig. 6.

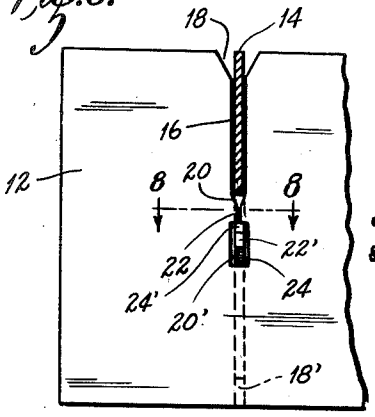
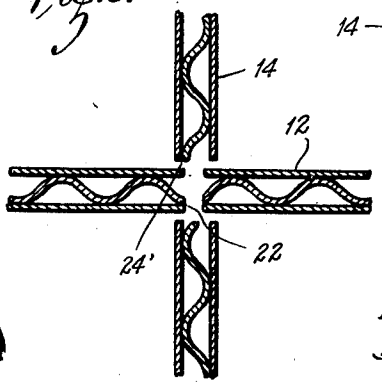


Fig. 8.



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UNITED STATES PATENT OFFICE

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PARTITION LOCKING CONSTRUCTION

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1 Claim. (Cl. 217—32)

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The present invention relates generally to partition assemblies for separating bottles, jars, and the like, in containers, and more particularly to a partition assembly locking construction which is particularly effective for corrugated and other heavy stock.

In brief, the present partition assembly locking construction includes identical opposed interengaging partition strips, each of which is die-cut at predetermined spaced intervals to include a slot extending inwardly from one edge thereof of a width a little greater than the thickness of the stock being employed, the slot funneling to a narrow short passage, the innermost end of which is at substantially the longitudinal center line of the partition strip, the passage communicating at its inner end with a substantially rectangular opening also of a width a little greater than the thickness of the stock. The depth of the rectangular opening and the combined depths of the narrow passage and the funnel portion of the slot are substantially the same so that there is an interfitting relationship.

Therefore, an object of the present invention is to provide novel partition assembly locking construction which is particularly adapted for use with partition strip stock of relatively heavy gauge such as corrugated board, and the like.

Another object is to provide novel partition assembly locking construction in which the transverse partition strips are readily and effectively nested with the longitudinal partition strips, or vice versa, without damage to the strips and with a resulting securely engaging interlock.

Another object is to provide novel partition assembly locking construction incorporating identical cutouts in both the transverse and longitudinal partition strips.

Another object is to provide novel partition assembly locking construction in which a well is provided in each partition strip which interlock, and in which nesting engagement of the transverse and longitudinal partition strips is facilitated by corresponding channels in each.

Other objects are to provide novel partition assembly locking construction which is relatively inexpensive to die-cut, which is rugged in construction and, hence, remains effective for its interlocking purposes for a long period of use, which is simple in construction, which is formed for ready mechanical nesting of the transverse partition strips with the longitudinal partition strips, or vice versa, which may be manually separated as to the component partition strips when required when the assembly is substantially collapsed, although accidental displacement of a partition strip from the remaining partition strips of an assembly is reduced to a bare minimum, and which finds wide application.

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The foregoing and other objects and advantages are apparent from the following description taken with the accompanying drawing, in which:

Fig. 1 is a plan view of an open partition assembly adapted to be disposed in a carton for separation of bottles, jars, and the like, which incorporates locking construction formed in accordance with the teachings of the present invention;

Fig. 2 is a side elevational view thereof;

Fig. 3 is an end elevational view thereof;

Fig. 4 is an enlarged fragmentary view of one end of one of the longitudinal partition strips showing the configuration of the locking construction;

Fig. 5 is a view similar to Fig. 4 of one of the transverse partition strips, likewise showing the configuration of the locking construction;

Fig. 6 is an enlarged cross-sectional view on substantially the line 6—6 of Fig. 2;

Fig. 7 is an enlarged fragmentary cross-sectional view on substantially the line 7—7 of Fig. 3; and

Fig. 8 is a further enlarged fragmentary horizontal cross-sectional view on substantially the line 8—8 of Fig. 6.

Referring to the drawing more particularly by reference numerals, 10 indicates generally a partition assembly which incorporates locking construction formed to include the teachings of the present invention. The partition assembly 10 includes transverse partition strips 12 and longitudinal partition strips 14, the latter being illustrated as nested with the former, although the vice versa proceeding may be followed in forming the partition assembly 10. Five transverse partition strips 12 and three longitudinal partition strips 14 are shown, but, manifestly, the number of partition strips will depend upon the number of units to be separated in particular containers.

Predeterminately spaced slots 16 extend into the transverse partition strips 12 from one side edge thereof, each of which is of a width a little greater than the width of the paper stock from which the to-be-received partition strips 14 are formed. At its outer end, each slot 16 includes a mouth 18 formed as a V to facilitate nesting. At its inner end, each slot 16 includes a converging funnel portion 20 which communicates with a narrow passage or slot 22, the innermost end

of which terminates at substantially the longitudinal center line of the partition strip 12. The inner end of the narrow slot 22 communicates with a rectangular well or opening 24 formed on the same axis with the slot 16 and being of a width slightly greater than the width of the slot 16 and of a depth substantially equal to the combined depths of the funnel portion 20 of the slot 16 and the narrow slot 22. The narrow slot 22 is of a width twenty-five to fifty percent of the particular stock of the partition strip to be received.

The longitudinal partition strips 14 are cut in the same manner as the partition strips 12, but from the opposite edge when considering the partition strips 12 and 14 for nesting purposes, and, hence, the corresponding cutout portions in the partition strips 14 are similarly marked with the same reference numerals primed.

Manifestly, the longitudinal strips 14 may be simultaneously nested with the transverse partition strips 12, or the former may be nested one at a time with the latter, depending upon the type of assembly machine employed. At any rate, the partition strips 12 and 14 are nested at right angles to each other as is fully indicated in Fig 1.

In nesting a longitudinal partition 14 with the transverse partition strips 12, the slot 16' telescopes with its corresponding slot 16 until the entrance end of the narrow slot 22' engages the entrance end of the narrow slot 22. Continued downward movement of the longitudinal partition strip 14 relative to the transverse partition strip 12 moves the narrow slot 22' and its adjacent funnel portion 25 downward until both are located within the well 24. Similarly, the narrow slot 22 and the adjacent funnel portion 20 will be located in the well 24'. The split upper wall of the well 24 will be in engagement with the split upper wall of the well 24', and, since the width of the narrow slots 22 and 22' is preferably less than fifty percent of the width of the stock from which the respective received partition strips 12 and 14 are formed, the partition strips 12 and 14 will be interlocked at each of the locking structures. The interlock is so effective that it is difficult to manually separate a selected partition strip 12 or 14 from the partition assembly 10 when opened to the operative position shown in Fig. 1. It is necessary to collapse the partition assembly 10 in the well known manner to easily separate a selected partition strip 12 or 14. Hence, an effective locking construction is provided.

The slots 16 and 16' are a little wider than the stock from which the respective received partition strips 12 and 14 are formed in order to facilitate the collapsing of the partition assembly 10 which is required in shipment of the same. Similarly, the wells 24 and 24' are made a little wider than the stock in order to accommodate the lips which define the narrow slots 22 and 22' and the funnel portions 20 and 20'. The funnel portions 20 and 20' facilitate the final nesting movement of the moving partition strip into locking engagement with the stationary partition strip.

The present invention has been illustrated as applied to corrugated stock, and it is particularly adapted to this type of paper board, but it may be employed with other stock. Corrugated paper board stock is relatively easily crushed and deformed, a deficiency which is overcome by the present locking construction. The cooperating narrow slots 22 and 22' permit the interpassage of the corrugated material without crushing the same, there being a sufficient amount of resiliency in this material to return to normal shape after the minor compression of this ultimate nesting movement.

Hence, there has been provided a locking construction for partition assemblies which fulfills the objects and advantages sought therefor.

It is to be understood that the foregoing description and the accompanying drawing have been given by way of illustration and example. It is also to be understood that changes in form of the elements, rearrangement of parts, and substitution of equivalent elements, which will be obvious to those skilled in the art, are contemplated as within the scope of the present invention which is limited only by the claim which follows.

What is claimed is:

A partition assembly including interlocked transverse and longitudinal strips of compressible sheet-like material, said strips being retained in interlocked assembled relation by a locking construction comprising identical open slots formed in the transverse and longitudinal strips, each of said slots being formed symmetrically about an imaginary straight line and extending perpendicularly from a horizontal edge of its respective strip to a point substantially beyond half the width of the strip, each of said slots including a converging mouth portion adjacent said edge, an elongated portion having parallel edges spaced apart a distance in excess of the thickness of the sheet-like material, a converging funnel portion, a restricted portion having parallel edges spaced apart a distance less than the thickness of the sheet-like material, and a rectangular well portion having parallel edges spaced apart a distance in excess of the thickness of the sheet-like material, said slot portions being interconnected in the order recited, the interconnection between the restricted portion and the well portion being substantially at the half width of the respective strip, and the length of the well portion being substantially equal to the combined length of the converging funnel portion and the restricted portion.

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