

[54] BINNING AND BANDING STRUCTURE

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[51] Int. Cl. **A47f 5/10**

[58] Field of Search 211/184, 43; 312/140.4, 312/140.3, 140; 108/61, 27; 220/22.1, 22

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[57] **ABSTRACT**

A partitioning assembly for segregating merchandise on a display shelf in which the banding partition adjacent the edges and the binning partitions, which divide the shelf area into bins, are interlocked by T-shaped tongue and groove connections. Confronting hooks on the opposed banding partitions fasten the banding along the edges of the shelf and securely lock the rigid assembly in place. If the bins are to be open along one edge of the shelf, posts interlocked with the dividers by similar T-shaped tongue and groove connections are secured along the shelf edge by hooks confronting the hooks associated with the opposing banding. Various arrangements are provided for securing the hooks to the banding and to the posts for use with solid and perforated shelving.

20 Claims, 18 Drawing Figures

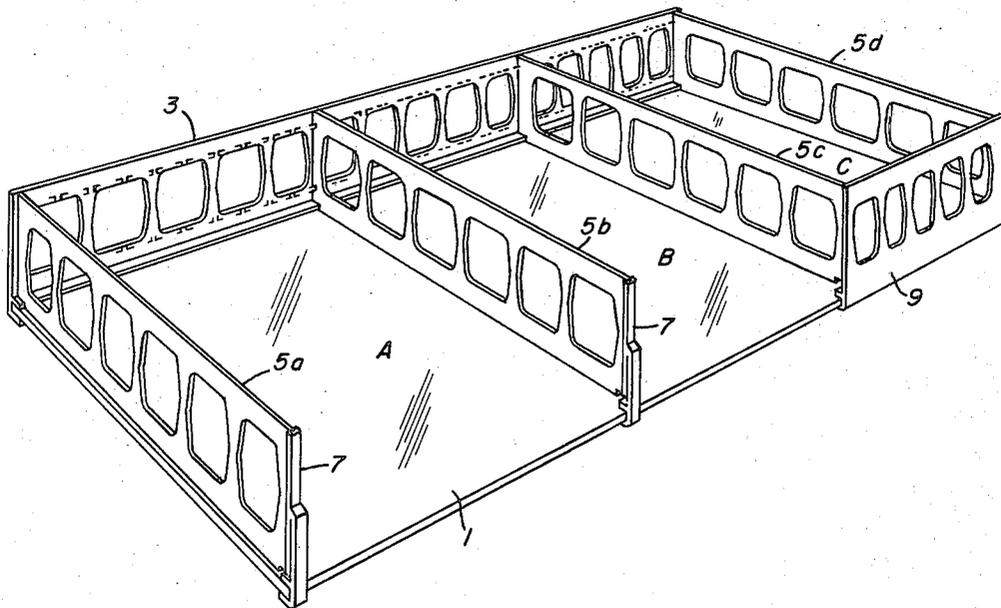


FIG. 1.

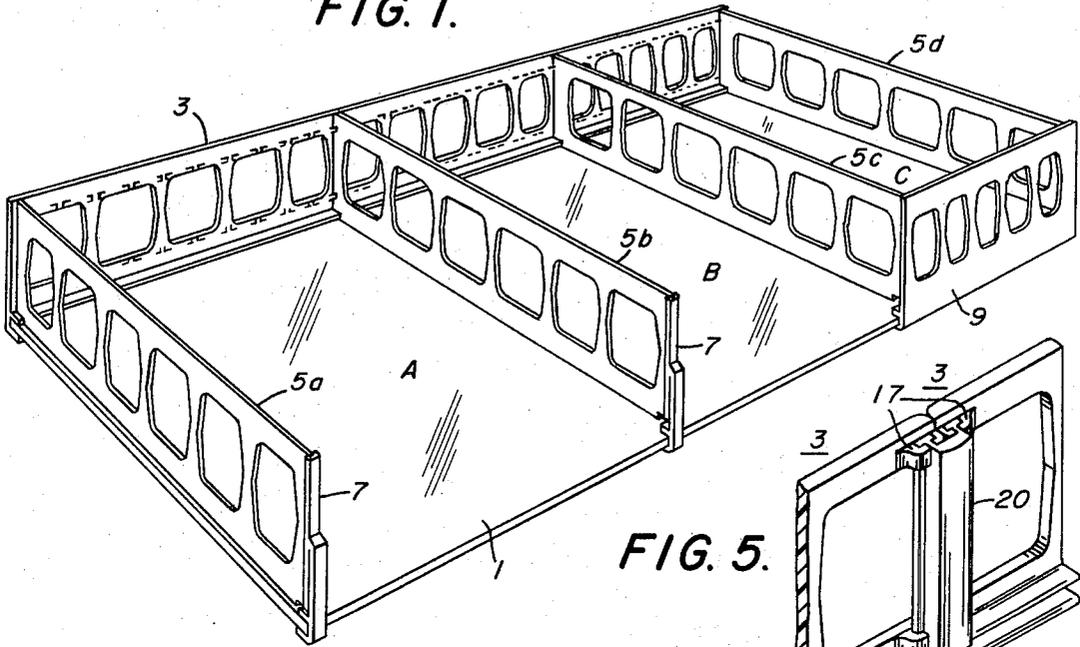


FIG. 5.

FIG. 3.

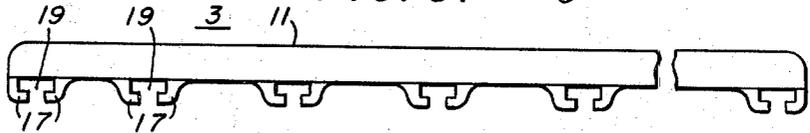


FIG. 4.

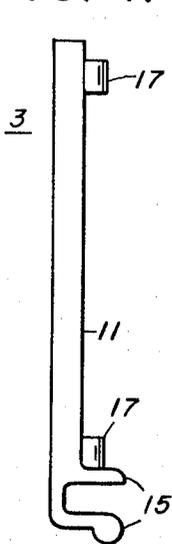


FIG. 2.

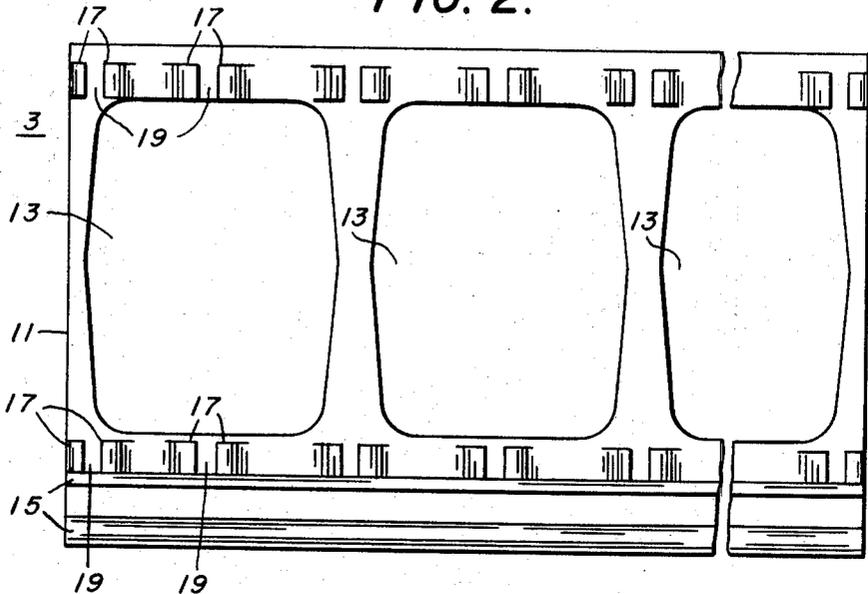


FIG. 7.

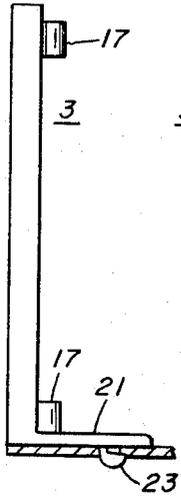


FIG. 6.

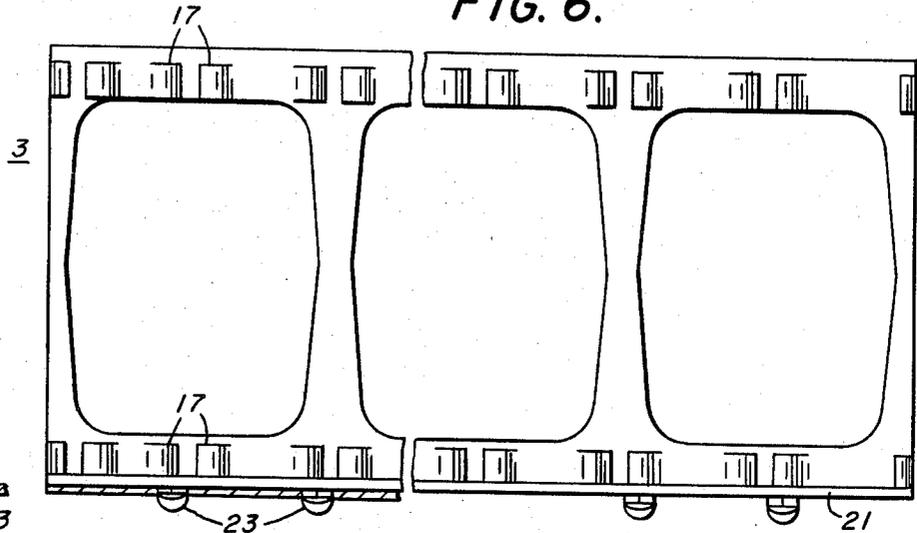


FIG. 9.

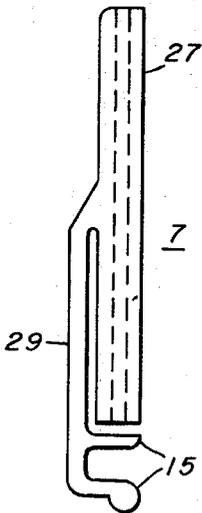


FIG. 8.

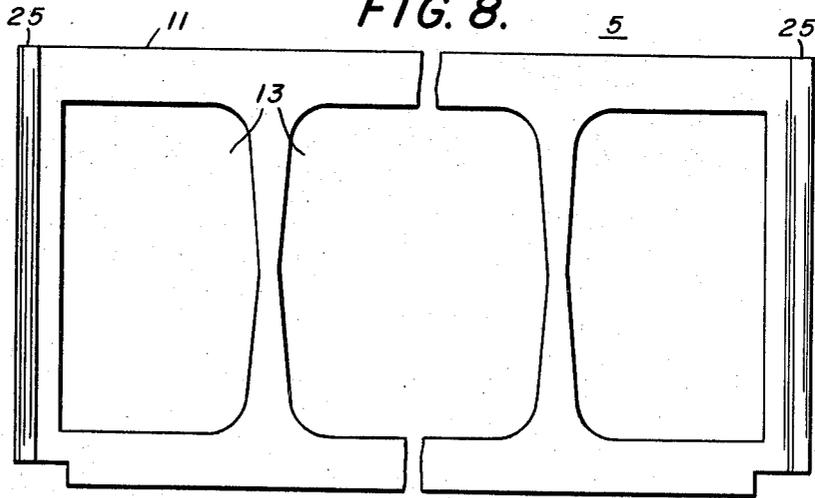


FIG. 10.

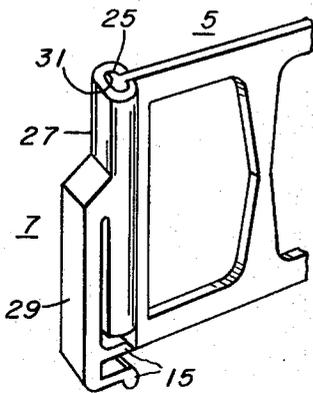


FIG. 11.

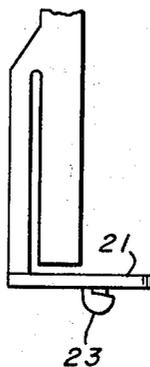
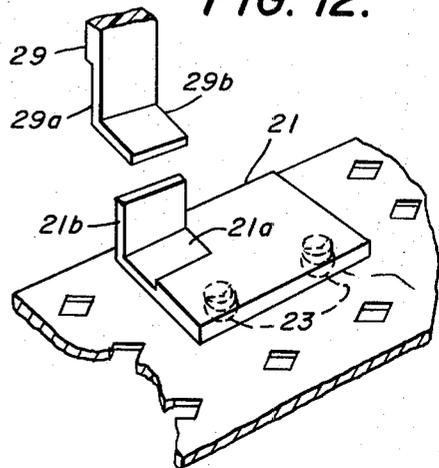
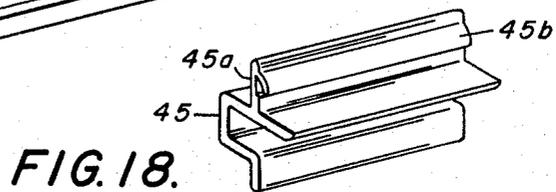
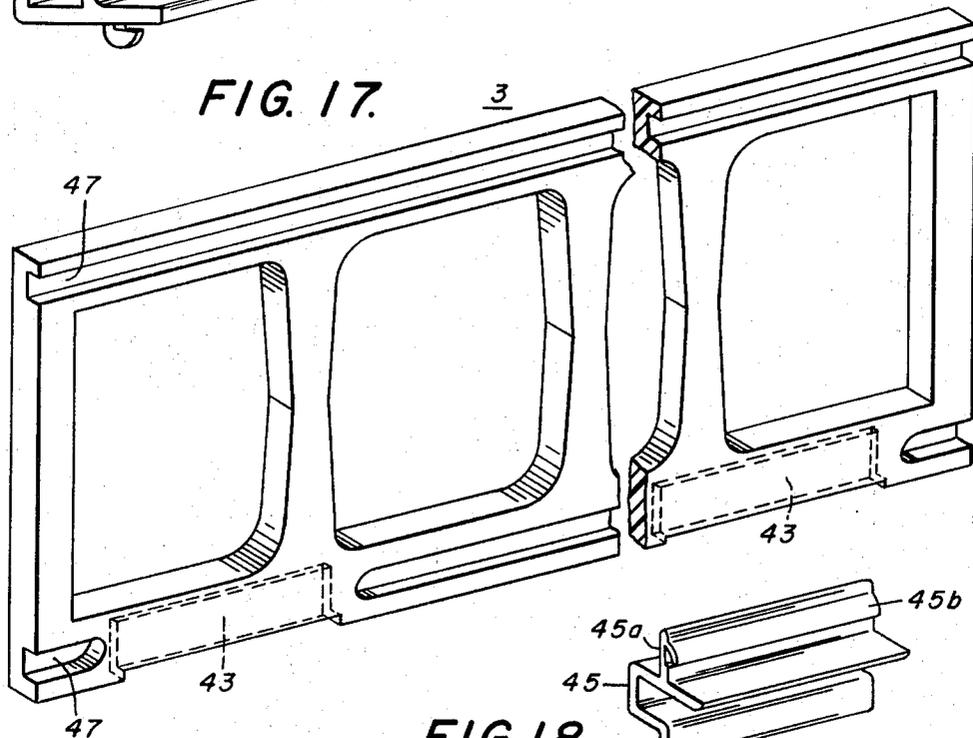
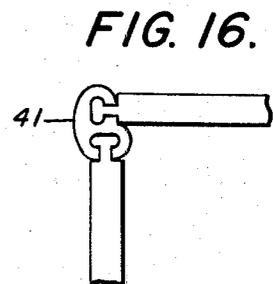
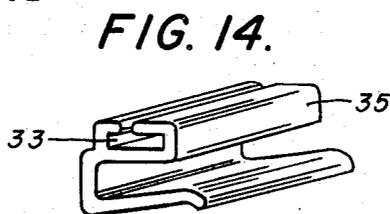
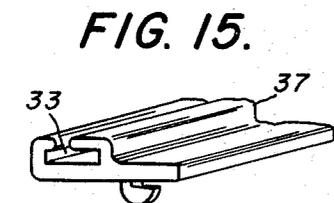
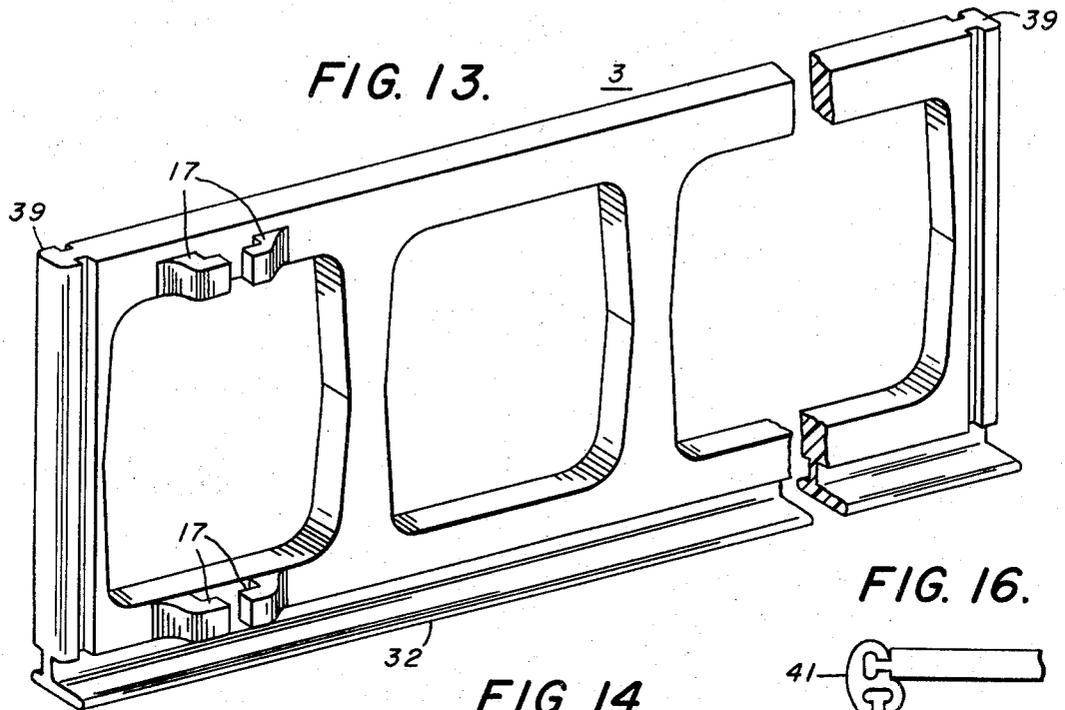


FIG. 12.





BINNING AND BANDING STRUCTURE

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to partitions used to separate merchandise on display shelves and to devices used to secure such partitions in upright position on the shelves.

2. Prior Art

In dividing shelf area for displaying merchandise, the partitions adjacent the edges of the shelf are commonly referred to as banding, while the partitions which form the interior dividers are referred to as binning. Early banding and binning comprised glass panels which were held in place by a variety of metal clips. More recently, banding and binning have been constructed of molded plastic. The plastic partitions have been held in place with various other clips, some of which have cooperated with connections molded into the plastic, or with fasteners which formed an integral part of the partition, such as that shown in U.S. Pat. No. 3,501,019. Means were provided in the prior art banding and binning for securing the partitions either to solid or perforated shelving.

All of the arrangements for connecting and securing banding and binning seek to satisfy similar objectives. A principal objective is flexibility. This includes not only adaptability to a number of different configurations, but the standardization of components. Another important feature is ease of use. The partitions must be capable of being rearranged quickly and easily by generally unskilled personnel. Finally, the partitions must be durable to withstand hard use and stable to resist being knocked out of place.

SUMMARY OF THE INVENTION

According to the invention, banding and binning partitions are securely connected with the binning partition in abutting relationship with the banding partition by interlocking, preferably T-shaped, tongue and groove connections. The banding is secured along a first edge of the shelf by hooks opening toward the binning partition or divider. The opposite end of the divider may abut a second banding partition or a post, either of which is connected to the divider by a similar interlocking, preferably T-shaped, tongue and groove connection. The second banding partition or the post is secured along the edge opposite the first edge of the shelf by hooks also opening toward the binning partition. The hooks may be either the open-jawed type, which fit over the edge of the solid shelf, or the undercut button type, which engage perforations in metal shelving. In any event, the confronting hooks on the banding or posts and the interlocking connections with the binning partitions join the partitions with the shelf to form a rigid structure which cannot easily be knocked out of place. The assembly is easily installed by engaging the hooks with the shelf and then sliding the binning partitions into the vertically aligned, T-shaped, tongue and groove connections.

In the embodiments of the invention disclosed, tongues are provided on both ends of the binning partitions and grooves are provided in the posts and the banding. Preferably, a number of vertically aligned grooves are horizontally spaced along the banding to provide flexibility in arrangement. The grooves may be

defined by upper and lower projections on the inner surfaces of the banding.

Standardized banding, usable with either solid or perforated shelving, may be provided by forming the upright portion of the banding and the hooking assemblies separately. The banding may be connected to strips incorporating either the open-jaw hook or the undercut button hook by horizontally aligned tongue and groove connections. The tongue and groove connections may be the T-shaped interlocking type or the straight tongue and groove. In the latter case, vertically extending tongues on the hooking strips may slide into vertical slots in the bottom of the banding. A barb on the tongue tightens the connections. Interlocking tongue and groove connectors can be used to join the banding partitions end to end to form continuous banding on a long shelf or to join banding at the corners.

BRIEF DESCRIPTION OF THE DRAWINGS

An understanding of the invention can be gained from reference to the following description when taken in conjunction with the drawing, in which:

FIG. 1 is a perspective view of a binning and banding assembly incorporating the invention;

FIG. 2 is a front elevation view of a portion of integral banding used with solid shelving;

FIG. 3 is a plan view with parts missing of the banding of FIG. 2;

FIG. 4 is an end view of the banding of FIG. 2;

FIG. 5 is an isometric view of portions of banding joined end to end;

FIG. 6 is a front elevation view of a portion of integral banding for use with perforated shelving;

FIG. 7 is an end elevation view of the banding of FIG. 6;

FIG. 8 is an elevation view of a binning partition or divider;

FIG. 9 is a side elevation view of a post;

FIG. 10 is an isometric view of the interconnection of the divider of FIG. 8 and the post of FIG. 9;

FIG. 11 is an elevation view of an alternate base for the post of FIG. 9;

FIG. 12 is an isometric view of a portion of a post and an adapter for securing the post to perforated shelving;

FIG. 13 is an isometric view of one form of standardized banding;

FIG. 14 is an isometric view of a portion of an adapter for securing the standardized banding of FIG. 13 to solid shelving;

FIG. 15 is an isometric view of a portion of an adapter for securing the standardized banding of FIG. 13 to perforated shelving;

FIG. 16 is a plan view of a corner connector for the standardized banding of FIG. 13;

FIG. 17 is an isometric view of slotted standardized banding; and

FIG. 18 is an isometric view of an adapter for securing the slotted standardized banding of FIG. 17 to solid shelving.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 1 illustrates a solid shelf 1 of glass or other suitable shelving material, provided with a banding partition 3 along the rear edge and four binning or divider partitions 5a - 5d which extend across the width of the shelf at spaced intervals. The forward end of the divid-

ers 5a and b are secured to the front edge of the shelf by posts 7 in a manner to be described subsequently. The front edges of the binning 5c and 5d join a short banding partition 9 which is secured to the front edge of the shelf. The banding and binning partitions thus divide the shelf into two open-ended bins A and B and one closed bin C. The arrangement shown in FIG. 1 is illustrative only and numerous other arrangements are possible.

FIGS. 2, 3 and 4 illustrate one form of banding according to the invention which may be used with solid shelving. The upright planar portion 11 is provided with openings 13 which enhance the decorative value of the banding and at the same time reduce the material cost and weight. Any design including lattice work may be used since it is completely irrelevant to the operation of the invention. Integrally molded along the bottom edge of the banding are two horizontal projections 15 which run the length of the banding. These horizontal projections form the jaws of a hook which may be fitted over the edge of solid shelving. By molding the banding of resilient plastic, the hook can be proportioned to securely clamp standard shelving. The radius on the lip of the lower jaw aids in snapping the banding in place.

At spaced intervals along a top edge of the vertical portion 11 are pairs of opposed undercut projections 17 which cooperate to form T-shaped grooves 19. Vertically aligned T-shaped grooves are defined by pairs of opposed undercut projections similarly spaced along the bottom of the upright portion 11 above the upper horizontal projection 15. The T-shaped grooves are used to connect the banding and binning partitions and may be spaced at desired intervals or preferred locations along the length of the banding. The banding may be provided in a variety of standard lengths. Sections of banding may be joined end to end for use on longer shelving by U-shaped connectors 20 which engage the end grooves of adjacent banding as shown in FIG. 5.

FIGS. 6 and 7 illustrate the banding previously described modified for use with perforated metal shelving. The jaws along the bottom of the banding are replaced by a single horizontal projection 21 from which button type hooks 23 depend at intervals compatible with the spacing of the perforations in the metal shelving. The stems of the button-type hooks may be wedge-shaped to center the hooks in the popular diamond-shaped perforations illustrated in FIG. 12.

The binning partition or divider 5 illustrated in FIG. 8 is provided with an upright portion 11 having openings or other similar lattice work 13 similar to that of the banding. Horizontal projections 25 extending along the height of each and of the divider 5 cooperate with the planar partition 11 to form T-shaped tongues which are best illustrated in the isometric view of FIG. 10. The tongue 25 of the divider may be vertically slid into the T-shaped grooves 19 in the banding to interlock the divider 5 in abutting relationship with the banding 3 as illustrated in FIG. 1. The plurality of projections 17 permits the dividers to be interconnected with the banding at a number of discrete positions.

Referring to FIGS. 9 and 10, the post assemblies 7 include a post 27 which is supported near its mid-point by an upright 29. Horizontal projections 15 at the lower end of the upright form a pair of jaws similar to those on the lower edge of the banding shown in FIGS. 2 and 4 for engaging the shelving. A T-shaped groove 31 ex-

tends the full length of the post 27. The groove 31 interlocks the post with the divider 5 as shown in FIG. 10. With the post assembly constructed of resilient plastic material, the upright 29 can flex to apply a positive locking force to the confronting hooks on the post assembly and the banding. It should be understood that, if it is desired that the bins be open front and back, the binning may be held in place at both ends by post assemblies.

FIG. 11 shows that the post assembly may be provided with button-type hooks for use with metal shelving. It is desirable that the horizontal projection 21 on the bottom of the post be large enough to accommodate two button-type hooks to provide a stable connection with perforated shelving. In that case, both a right and a left post would have to be provided if the end dividers 5a and 5d in FIG. 1 are to be placed close to the end of the shelf. In order to eliminate the necessity of making two complete post assemblies, separate right and left button hook adapters may be made to be joined with a standardized post and upright assembly. As shown in FIG. 12, the horizontal projection 21 is fabricated separately. A recess 21a is formed in the appropriate rear corner of the adapter and fitted with a vertical flange 21b. The lower end of the upright 29 is undercut and provided with a thin horizontal projection 29b. The parts 21 and 29a and b cooperate to form a double lap joint which may be glued. For a left post assembly the recess 21a and flange 21d may be provided in the opposite rear corner of the adapter 21.

Alternatively, in some instances it may be desirable to provide standardized banding and appropriate adapters for use with either solid shelving or perforated shelving. Accordingly, the banding 3 in FIG. 13 is provided with a T-shaped tongue 32 extending along its lower edge. Corresponding T-shaped grooves 33 in adapters 35, shown in FIG. 14, or 37, shown in FIG. 15, receive the T-shaped tongue along the bottom of the banding and secure the banding to solid or perforated shelving, respectively. The adapters may extend along the full length of the banding or sections of adapter may be provided at intervals. As an additional alternative, the ends of the standardized banding may be provided with vertical T-shaped tongues 39 whereby the banding may be joined at the corners by connectors 41 shown in FIG. 16.

FIG. 17 illustrates another form of standardized banding having vertical recesses 43 at spaced intervals along the bottom edge of the banding. Adapters 45, such as that shown in FIG. 18, having a vertical projection 45a which mates with the recess 43 may be used to secure the banding to solid shelving. A barb 45b on the projection 45a assures a tight fit between the adapter and the recess. Of course, a flat plate having a vertical projection for mating with the recesses 43 and having a button-type hook on the underside may be used to secure the banding of FIG. 16 to perforated shelving. The horizontal recesses 47 serve to reduce the weight of the banding which must be made thicker in order to accommodate the recesses 43.

It is clear from the foregoing discussion, that the invention may take many forms and that the specific embodiments disclosed are meant to be illustrative only.

I claim:

1. A partitioning assembly for confining merchandise to a desired section of a display shelf, said assembly comprising:

a first elongated generally planar first banding element;
 an elongated generally planar divider element;
 first securing means for securing said first banding element along a first edge of said shelf with the plane of said banding element substantially perpendicular to the plane of said shelf;
 first interlocking means for interlocking the banding and divider elements with one end of the divider in abutting relationship with the plane of the banding element;
 second securing means including a vertical element for securing the opposite end of the divider element adjacent to a second edge of the shelf, said second edge being opposite to said first edge, said first and second securing means including confronting hooking means; and
 second interlocking means for interlocking the opposite end of the divider element with said vertical element;
 said interlocking means including means defining a vertically aligned horizontally undercut groove in one element and a vertically aligned tongue having a horizontal cross-section which meshes with the undercut groove in the other element to lock the two together;
 said first and second securing means being positioned with said confronting hooks engaging said shelf and with said first banding element positioned along said first edge of said shelf, said divider element being slidable vertically downward between said first banding element and said vertical element with the tongue and groove of the respective interlocking means in interlocking engagement with one another, whereby the banding and divider elements are interlocked with the shelf to form a unified rigid structure.

2. The partitioning assembly of claim 1 wherein said hooking means comprise open jaws which fit over the associated edge of the shelf.

3. The assembly of claim 1 adapted for use with a perforated shelf wherein said hooking means comprise vertically depending hooks which engage the edges of the perforation in said shelf, the hooks of said first securing means confronting the hooks of said second securing means.

4. The assembly of claim 1 wherein said vertical element comprises a second banding element and wherein said second interlocking means interlocks said opposite end of the divider element in abutting relationship to said second banding element, said second securing means including hooking means for securing the second banding element along the second edge of said shelf.

5. The assembly of claim 4 wherein said confronting hooking means of said first and second securing means comprise open jaws which fit over the associated edges of the shelf.

6. The assembly of claim 4 adapted for use with a perforated shelf and wherein said hooking means comprise vertically depending hook means which engage the edges of the perforations in said shelf, the hooks of said first securing means confronting the hooks of said second securing means.

7. The assembly of claim 1 wherein said vertical element comprises a vertical post incorporating the respective portion of said second interlocking means for

interlocking said opposite end of said divider and said post, and a resilient upright for supporting said post, said hooking means being connected to the lower end of said resilient upright.

8. The assembly of claim 7 wherein said resilient upright is connected to said post intermediate the ends of said post by a bridging member which offsets the post horizontally from the upright.

9. The assembly of claim 8 wherein said bridging member connects the upright to substantially the midpoint of said post.

10. The assembly of claim 7 wherein said first and second interlocking means comprise generally T-shaped vertically aligned tongues on either end of the divider partition and means defining corresponding generally T-shaped vertically aligned grooves on the abutting face of said banding partition and in said post.

11. The assembly of claim 10 wherein the means defining the generally T-shaped vertically aligned groove in the banding includes upper and lower grooved projections and wherein a second set of upper and lower grooved projections define a second vertically aligned groove horizontally offset from the first groove whereby the divider may be interlocked with the banding in either of two positions.

12. The assembly of claim 1 wherein said banding is provided with connecting means for selectively connecting the banding with first separately formed first securing means incorporating open-jaw hooking means for engaging the edges of solid shelving and with second separately formed first securing means incorporating button-type hooks for engaging the perforations of perforated shelving.

13. The assembly of claim 12 wherein said connecting means includes a horizontally oriented T-shaped tongue on one element and a corresponding horizontally oriented T-shaped groove on the other.

14. The assembly of claim 13 wherein said T-shaped tongue projects downwardly from the bottom edge of said banding and said T-shaped groove faces upwardly on said securing means.

15. The assembly of claim 12 wherein said connecting means includes a vertically aligned recess in the under edge of said banding and a correspondingly shaped upward projection on the upper surface of said projecting means.

16. The assembly of claim 15 including a barb on the side of said upward projection for engaging the sides of said recess.

17. A partitioning assembly for confining merchandise to a desired section of a display shelf, said assembly comprising:

first and second post elements;

first securing means for securing the first post to a first edge of said shelf and second securing means for securing the second post to a second edge of said shelf which is opposite said first edge, said first and second securing means including confronting hooking means;

an elongated generally planar divider element; and
 first and second interlocking means for interlocking the first and second post elements with the ends of said divider element to support said divider in an upright position on said shelf, each of said interlocking means including means defining a vertically aligned horizontally undercut groove in one element and a vertically aligned tongue having a

horizontal cross-section which meshes with the undercut groove in the other element to lock the two together;

said post elements being positioned along the opposing edges of the shelf with the confronting hooking means engaging the shelf and said planar divider element being slidable vertically downward between said post elements with the tongue and groove of the respective interlocking means in interlocking engagement with one another, whereby the divider element is interlocked with said shelf to form a unified rigid structure.

18. The assembly of claim 17 wherein said hooking means comprise open jaws which fit over the associated

edge of the shelf.

19. The assembly of claim 17 adapted for use with a perforated shelf wherein said hooking means comprise vertically depending hooks which engage the edges of the perforation in said shelf, the hooks of said first securing means confronting the hooks of said second securing means.

20. The assembly of claim 17 wherein said first and second interlocking means comprise generally T-shaped vertically aligned tongues on either end of the divider element and means defining corresponding generally T-shaped vertically aligned grooves in the post elements.

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