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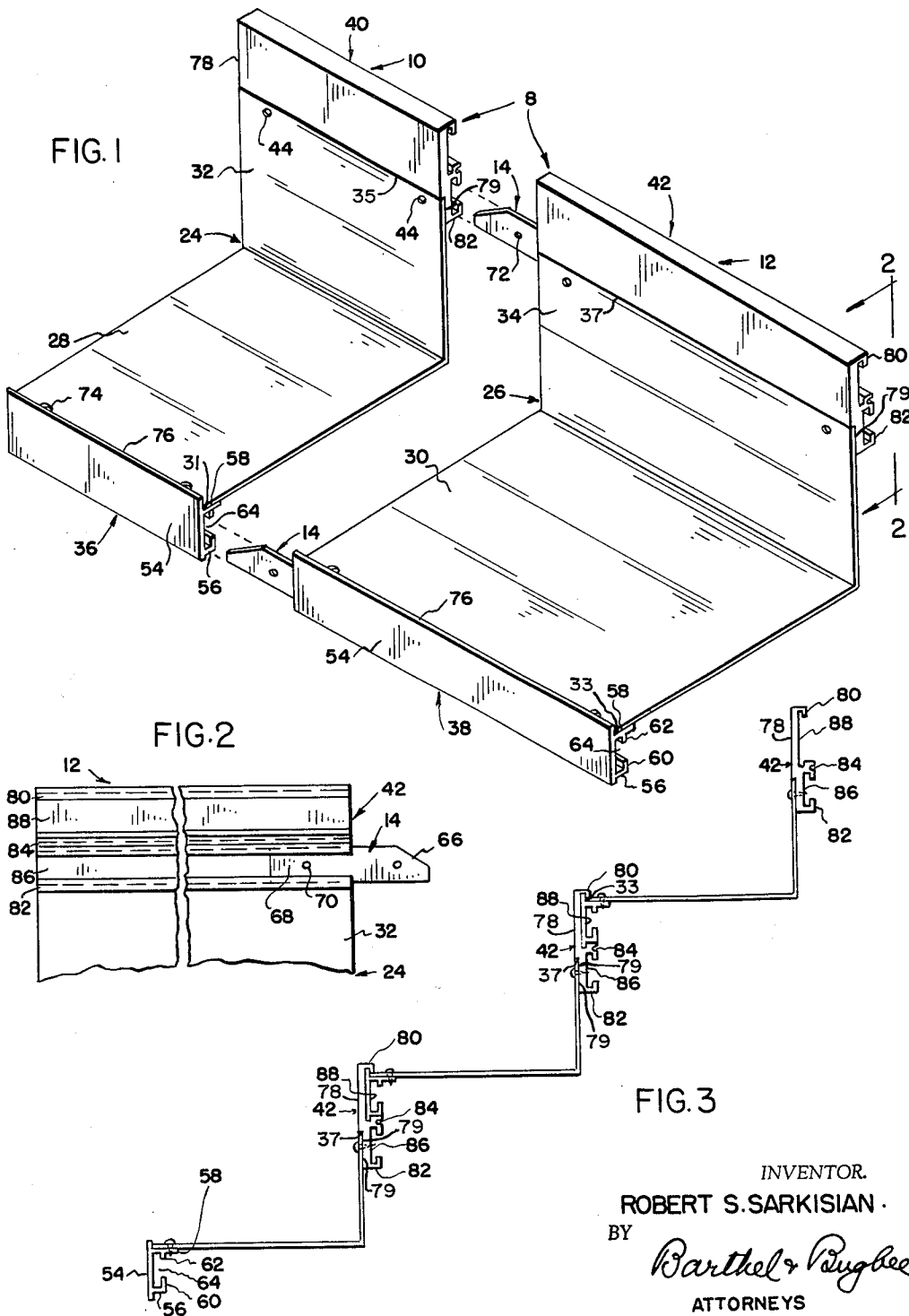
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3,167,187

SECTIONAL DISPLAY SHELF STRUCTURE

Filed Sept. 25, 1963

2 Sheets-Sheet 1



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FIG. 5

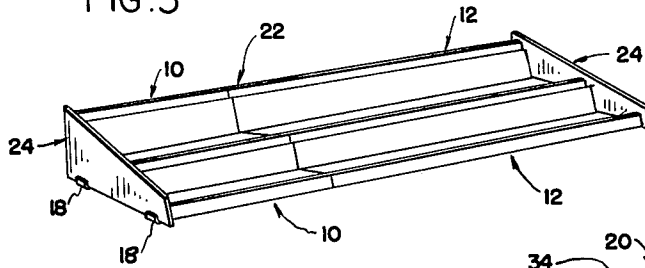


FIG. 4

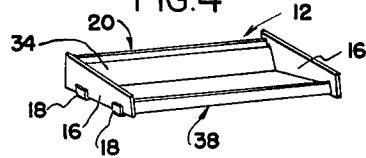


FIG. 6

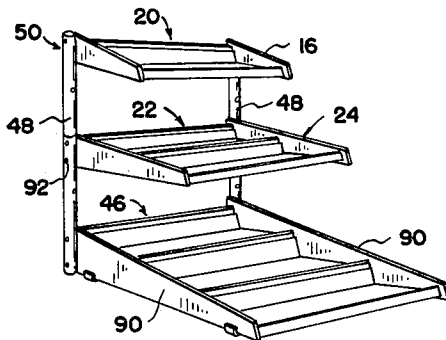


FIG. 7

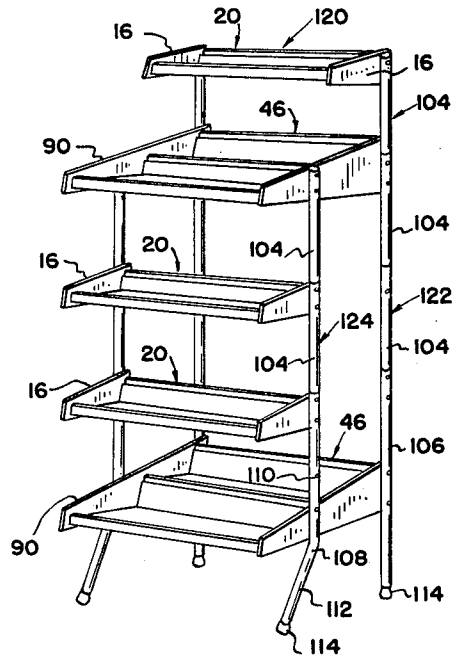
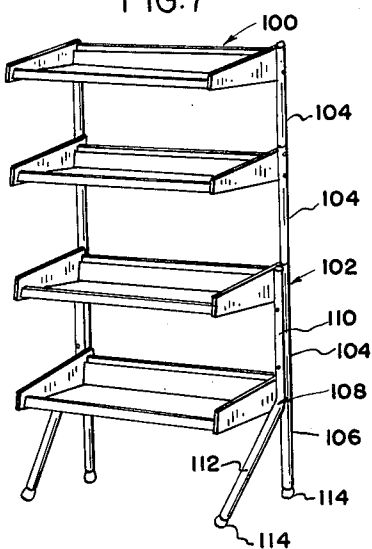


FIG. 8

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SECTIONAL DISPLAY SHELF STRUCTURE

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This invention relates to display structures and, in particular, to display shelf structures.

One object of this invention is to provide a sectional display shelf structure which is composed of interchangeable units or components thereof which may be coupled to one another in various ways to provide different lengths and widths of shelf and different arrangements thereof, so as to meet the particular requirements and facilities of the merchant displaying the goods.

Another object is to provide a sectional display shelf structure of the foregoing character having interchangeable shelves which may be made up in short, intermediate or long sections or of composite sections thereof merely by using either of two shelf sections of different lengths or coupling them together end to end to make a third combined length.

Another object is to provide a sectional display shelf structure of the foregoing character wherein the interchangeable individual shelves may be made of different depths by coupling them to one another along their longitudinal edges to increase their width to either single, double or triple width.

Another object is to provide a sectional display shelf structure of the foregoing character wherein the interchangeable shelves may be supported one above the other in groups adapted either to rest upon an elevated supporting surface, such as a counter, or upon legs or secured to a wall or other vertical support or supports rising from the floor.

Another object is to provide interchangeable end plates of different lengths to fit the ends of single, double or triple shelf widths.

Other objects and advantages of the invention will become apparent during the course of the following description of the accompanying drawings, wherein:

FIGURE 1 is an exploded perspective view of a composite-shelf section including two interchangeable shelf components of different lengths near their coupled position with their central portions omitted by being broken away, to enable showing on an enlarged scale;

FIGURE 2 is a fragmentary rear elevation, looking in the direction of the arrows 2-2 in FIGURE 1;

FIGURE 3 is a side elevation, on a reduced scale, of three sections of shelving coupled to one another to form a triple width shelf according to the invention;

FIGURE 4 is a perspective view of a single width shelf formed from a component of FIGURE 1;

FIGURE 5 is a perspective view on a reduced scale, of an assembled double-width composite shelf unit formed from the components shown in FIGURE 1, and arranged to rest upon a counter;

FIGURE 6 is a perspective view on a reduced scale of a shelf structure comprising three tiers of single and double width shelves.

FIGURE 7 is a perspective view of a shelf structure composed of four tiers of single width shelves arranged to stand upon the floor, formed from the components shown in FIGURE 1; and

FIGURE 8 is a perspective view of a shelf structure formed of single and double width shelves mounted in five tiers and arranged to stand upon the floor.

Referring to the drawings in detail, FIGURE 1 shows a composite shelf section, generally designated 8, consisting of short and long elongated shelf components 10 and

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12 respectively adapted to be coupled end to end with one another by means of elongated splicing bars 14, and usable singly with truncated triangular single-width end plates 16 to form a single-width shelf unit 20 (FIGURE 4) adapted to rest upon a counter (not shown) or other elevated support by means of grooved rubber or plastic feet 18 attached to the lower edges of the end plates 16. The same components 10 and 12 with their coupling bars 14 may also be fitted together end to end and similar short and long components 10 and 12 added behind them by sliding engagement along their longitudinal edges to form the double-width composite shelf unit 22 shown in FIGURE 5 and closed at its opposite ends by double-width end plates 24 in the manner set forth below.

Each shelf component 10 and 12 consists of a short or long angle plate 24 or 26 (FIGURE 1) preferably of aluminum, each composed of a bottom plate portion 28 or 30 with lower front edges 31 and 33 respectively and a back plate portion 32 or 34 with upper rear edges 35 or 37 respectively. The angle plates 24 and 26 are integral and along their front edges 31 and 33 are provided with short and long single-width internal coupling bars 36 and 38 respectively, also preferably of extruded aluminum. The connection between these components may be made by riveting or by the use of self-threading screws or similar fasteners 44. The single-width coupling bars 36 or 38 are of approximately double-T-shaped or Greek letter π shaped cross-section and are used at the front of the shelf structure. The double-width coupling bars 40 or 42 are of approximately triple-T-shaped cross-section and are used at the upper rear edges 35 or 37 thereof for the connection of additional shelf units 10 or 12 to form the double-width shelf units 22 of FIGURE 5 or the triple-width shelf units 46 shown in FIGURE 6. In FIGURE 6 these are topped by a single-width shelf unit 20 of FIGURE 4, and supported by vertical end posts 48 in the manner described in more detail below to form the triple-tiered shelf structure 50 of FIGURE 6.

Each of the single-width internal coupling bars 36 or 38 consists of a main or base portion 54 arranged in a vertical position and having horizontal lower flanges 56 of angle cross-section projecting rearwardly therefrom, and an upper flange 58 of T-shaped cross-section projecting rearwardly therefrom above the lower or angle flange 56. The vertical ribs 60 and 62 respectively cooperate to form a T-slot or channel 64 adapted to be slidably engaged by the coupling bar 14. The elongated splicing bar 14 has a rectangular cross-section snugly but slidably fitting the channels 64 and has a tapered front end 66 for convenient insertion in its adjacent channel 64. The rearward portion 68 is drilled as at 70 to be secured within its respective channel 64 by fasteners 44, such as rivets or screws, and the forward end portions of the splicing bars 14 are drilled as at 72 to receive the corresponding fastener 44 in the adjacent shelf unit 10. The forward edge portion of the bottom portion 28 or 30 of the angle plates 24 or 26 is secured by fasteners 74 to the upper T-section flange 58, which is slightly below the top edge of the channel bar 36 or 38 in order to provide a ledge 76 for preventing the displayed articles from sliding off.

Each of the double width external coupling bars 40 or 42 consists of a plate-shaped front or base portion 78 disposed in vertical position and having a rabbet extending along the lower edge thereof, the upper edge 35 or 37 of the back plate portion 32 or 34 being seated in said rabbet 79. The external coupling bars 40 and 42 have upper and lower angle flanges 80 and 82 respectively projecting rearwardly therefrom at their upper and lower edges. Intermediate the angle flanges 80 and 82 is an intermediate flange 84 of T-shaped cross-section providing a lower T-slot channel 86 of approximately rectangular

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cross-section adapted to snugly receive the splicing bar 14 and a wider upper T-slot or channel 88 of cross-section adapted to snugly and slidably receive the single-width internal coupling bar 36 or 38 in telescoping relationship with one another (FIGURE 3). This construction enables the components 10 and 12 to be coupled to one another in double or triple widths (FIGURE 3) or in even quadruple or greater widths (not shown).

In the use of the invention, to assemble the single-width shelf structure 20 of FIGURE 4, either the composite shelf section 8 or the short or long component 10 or 12 thereof is completed by securing the end plates 16 thereto, as by self-threading screws, and attaching the grooved feet 18 by pushing them upward onto the lower edges of the end plates 16. To form the double-width shelf structure 22, the short and long sections 10 and 12 are again united in the manner described above and then similar rearward components 10 and 12 are assembled by sliding their internal coupling bars 36 and 38 into the channels 88 in the double-width external coupling bars 40 and 42. Double-width end plates 24 are then secured to the opposite ends, such as by self-threading screws, the grooved rubber feet 18 slipped onto the lower edges of the end plates 24, and the double-width shelf unit 22 of FIGURE 5 is assembled.

The triple-width shelf unit 46 of FIGURES 3 and 6 is assembled in the same manner as the double-width unit of FIGURE 5 except that an additional shelf component 10 or 12 or a combination of components 10 and 12 is added at the rear in the same manner as the formation of the rearward second section of the double-width section 22, namely by sliding its front internal coupling bar 36, 38 or both into the corresponding channel 88 of the double-width external coupling bar 42. Triple-width end plates 90 are secured to the opposite ends of the triple-width shelf by means of fasteners, such as self-threading screws. The result is as shown in the lowermost level of FIGURE 6.

To assemble a single-width shelf unit 20, a double-width shelf unit 22 and a triple width shelf unit 46 into the three-tiered counter-supported structure 50 of FIGURE 6, side posts 48 are added at the opposite ends and the shelves secured to them in vertically-spaced relationship, such as by bolts or screws. The side bars 48 are conveniently formed with multiple screw holes 92 for this purpose.

To assemble a number of the single width shelf units 20 of FIGURE 4 into the multi-tiered floor-supported shelf structure 100 of FIGURE 7, jointed post units, generally designated 102, are assembled, using the requisite number of straight sections 104 with telescoping ends and a straight leg section 106 at the bottom thereof. A bent leg section 108 has its upper portion 110 secured as by bolts or screws to the lowermost straight section 104 and its inclined lower portion 112 projecting forwardly therefrom to impart stability to the structure 100. Suitable cup-shaped feet 114 of rubber or the like are slipped over the lower end of the leg sections 106 and 108.

To assemble the single width shelf units 20 and triple-width shelf units 46 into the multi tiered floor-supported shelf structure 120 shown in FIGURE 8, two rear posts 122 are assembled similar to the post 102 shown in FIGURE 7 and similarly consisting of jointed sections 104 telescoping at their ends with one another and with a straight leg section 106 at the bottom thereof provided with a foot 114 as before. Two front posts 124 are similarly assembled using the requisite number of straight sections 104—in FIGURE 8, one section less than in the rear posts 122—together with a bent leg section 108 having its upper portion 110 telescoped into the lowermost section 104 and its inclined lower portion 112 projecting forwardly and again equipped with a cup-shaped rubber foot 114. The opposite end plates 90 of two of the triple-width shelf units 46 are then secured to the upper and lower ends of the front posts 124, the lower

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shelf unit 46 being secured immediately above the upper end of the inclined leg portion 112. The rearward post 122 is secured to the end plates 90 in a similar manner so that the posts 122 and 124 are arranged at the corners of a rectangle. The end plates 16 of a single-width shelf unit 20 are secured to the upper ends of the rearward posts 122 by fasteners, as before, and the structure is completed by securing the end plates 16 of one, two or more single shelf units 20 to the front posts 124 at vertically-spaced locations between the upper and lower triple-width shelf units 46.

It will be evident that the provision of the unitized shelf units 20, 22 and 46 in various lengths and widths enables the merchant or other person displaying goods to assemble the desired shelf structure to fit his existing or available space whether on a table or counter, against the wall or free standing on the floor. This, moreover, is accomplished by the use of a minimum number of interchangeable sections or components, as set forth above.

What I claim is:

1. A coupling shelf component for a sectional shelf structure comprising

an elongated angle plate shelf member including an elongated bottom plate portion and an elongated back portion integral therewith substantially at right angles thereto,
said angle plate member having a lower front edge and an upper rear edge,

an elongated internal edge-to-edge coupling member secured to said bottom plate portion adjacent said front edge and extending therealong,

and an elongated external edge-to-edge coupling member secured to said back plate portion adjacent said rear edge and extending therealong,

said external coupling member having a coupling channel therein with a configuration corresponding to the configuration of said internal coupling member for matingly receiving a duplicate thereof in interfitting coupling relationship.

2. A coupling shelf component, according to claim 1, wherein said internal coupling member and said coupling channel are of approximately rectangular cross-section.

3. A coupling shelf component, according to claim 1, wherein said internal coupling member has a flange projecting rearwardly therefrom, said bottom plate portion being secured to said flange.

4. A coupling shelf component, according to claim 1, wherein said external coupling member has a rabbet extending along one edge thereof and wherein the upper edge part of said back plate portion is seated in said rabbet.

5. A coupling shelf component, according to claim 1, wherein said internal coupling member has a splicing channel therein and wherein said external coupling member also has a splicing channel therein, said splicing channels extending longitudinally therethrough from end to end thereof, and elongated splicing members of cross-sections corresponding to the cross-sections of said splicing channels insertable therein for end-to-end splicing of one shelf component to another shelf component.

6. A coupling shelf component, according to claim 5, wherein said splicing channel of said external coupling member is disposed in side-by-side parallel relationship with the coupling channel thereof.

7. A composite shelf section for a sectional shelf structure comprising

a pair of elongated angle plate shelf members disposed in end-to-end alignment,

each angle plate member having elongated mutually-perpendicular bottom and back plate portions with a lower front edge and an upper rear edge,

a pair of elongated internal edge-to-edge coupling members secured to said bottom plate portions adja-

cent their front edges in end-to-end alignment and extending therealong,

- a pair of elongated external edge-to-edge coupling members secured to said back plate portions adjacent their rear edges in end-to-end alignment and extending therealong, 5

said internal and external coupling members having splicing channels extending longitudinally therethrough,

- and elongated splicing members seated in said splicing channels in end-to-end connecting relationship with said coupling members. 10

8. A composite shelf section, according to claim 7, wherein said external coupling members having coupling channels therein disposed side by side with their splicing channels in aligned relationship with one another and of configuration corresponding to the configuration of said internal coupling member for matingly receiving a duplicate thereof in interfitting coupling relationship. 15

9. A composite shelf section, according to claim 7, wherein said splicing channels are of approximately rectangular cross-section. 20

10. A composite shelf section, according to claim 7, wherein end plates are secured to the exposed opposite ends of said angle plate sheet members and extending thereacross. 25

11. A coupled shelf assembly for a sectional shelf structure comprising

- a pair of elongated angle plate shelf members having elongated mutually perpendicular bottom and back plate portions with lower front edges and upper rear edges disposed in parallel relationship, 30

a pair of elongated internal edge-to-edge coupling members secured to said bottom plate portions adjacent their front edges and extending therealong, 35

a pair of elongated external edge-to-edge coupling

members secured to said back plate portions adjacent their rear edges and extending therealong,

said external coupling members having coupling channels therein of configuration corresponding to said internal coupling members with one of said internal coupling members disposed in interfitting mating engagement with the coupling channel of one of said external coupling members.

12. A coupled shelf assembly, according to claim 11, wherein said coupling channels are of approximately rectangular cross-section.

13. A coupled shelf assembly, according to claim 12, wherein said internal coupling members are also of approximately rectangular cross-section. 15

14. A coupled shelf assembly, according to claim 11, wherein end plates are secured to the opposite ends of said coupled angle plate shelf members and extend thereacross from the rearmost back plate to the foremost internal coupling member. 20

15. A coupled shelf assembly, according to claim 14, wherein top-grooved feet are secured to the lower edges of said end plates with said lower edges seated in said top grooves.

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