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H. A. GURRIES
SHELVING STRUCTURE

2,693,884

Filed Feb. 14, 1949

3 Sheets-Sheet 1

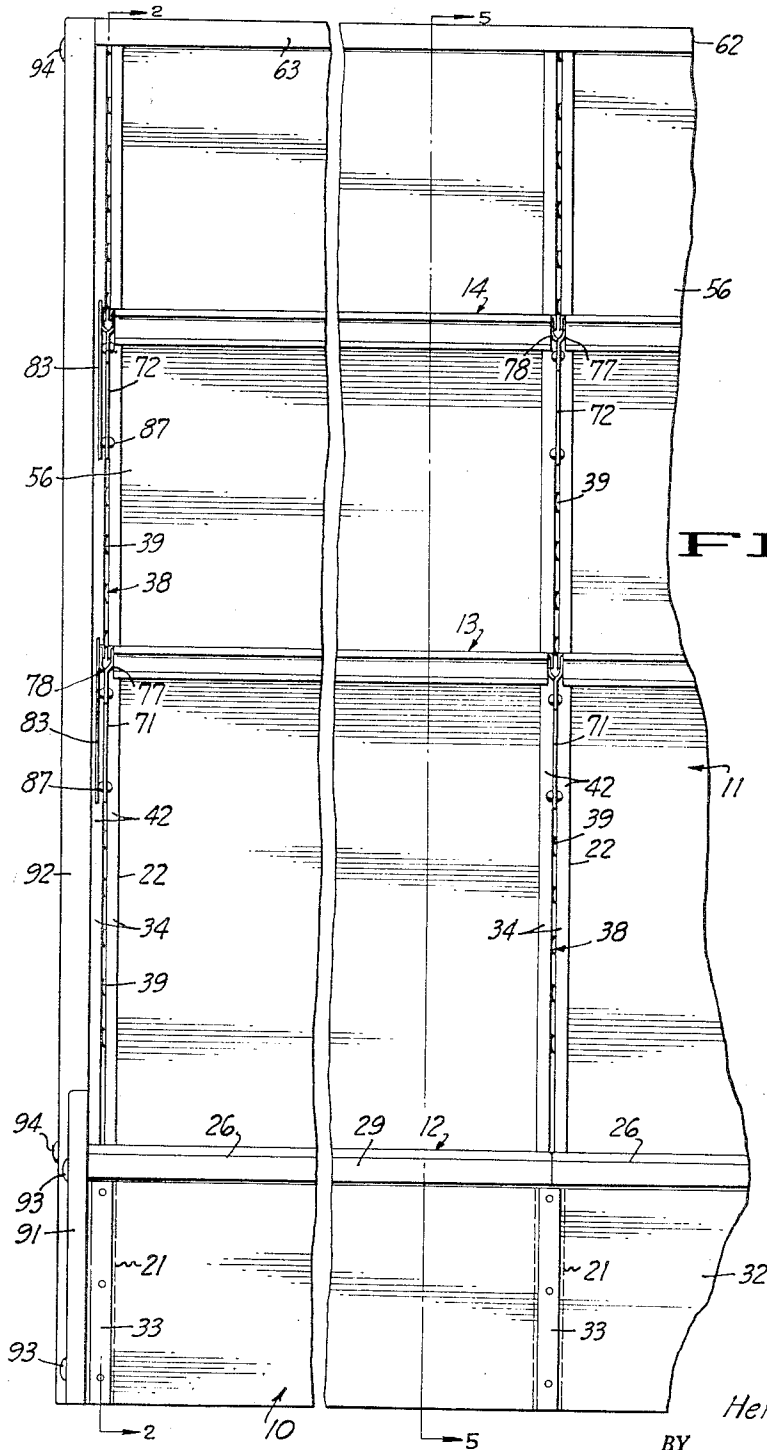


FIG. 1

INVENTOR.
Henry A. Gurries
BY *John W. Swain*
ATTORNEYS

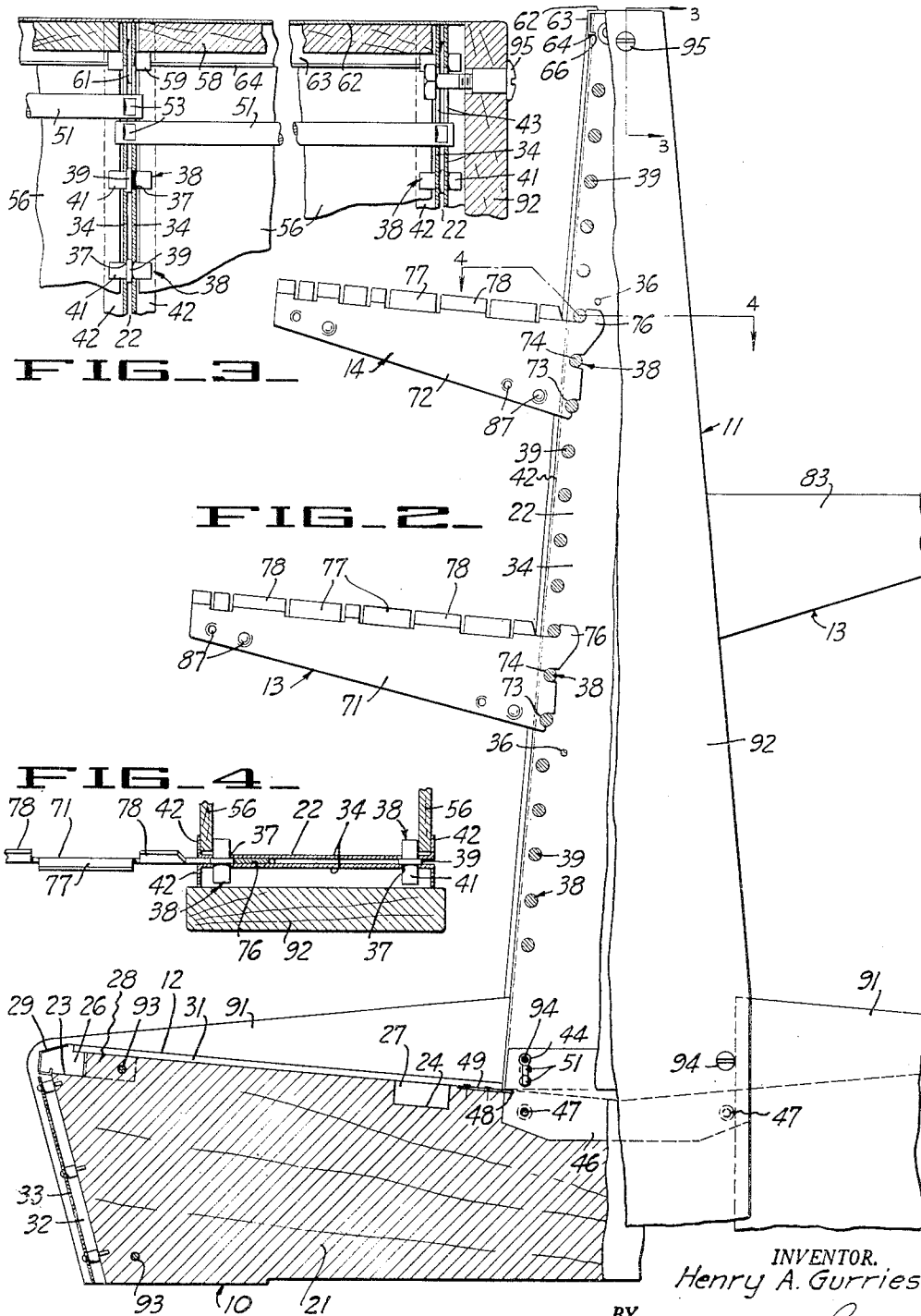
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INVENTOR.
Henry A. Gurries

BY
Flehm & Swain
ATTORNEYS

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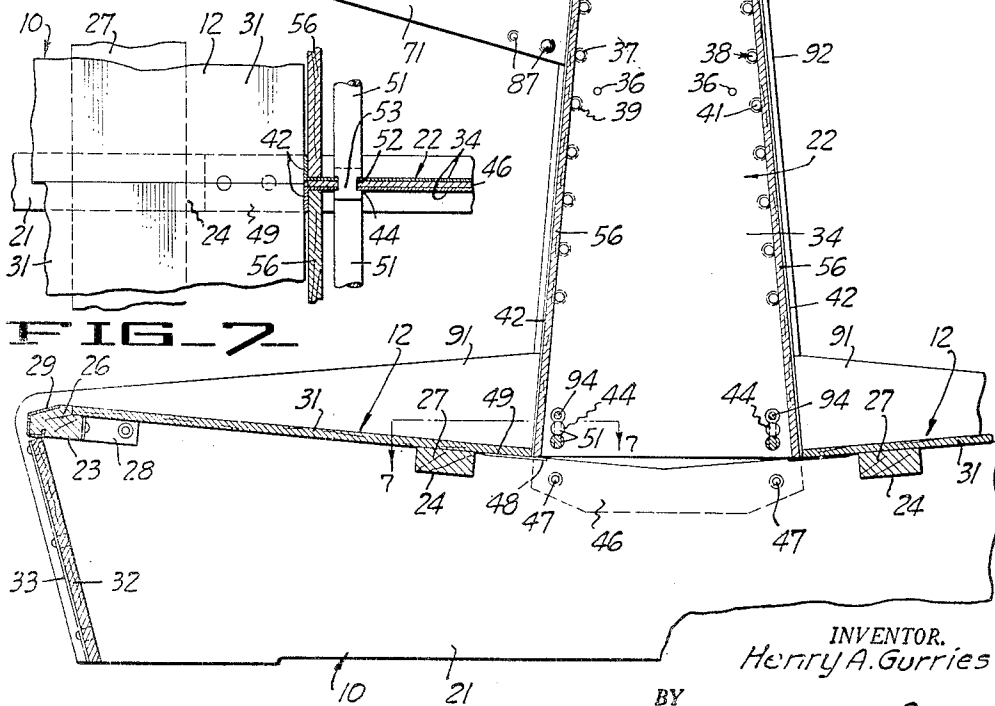
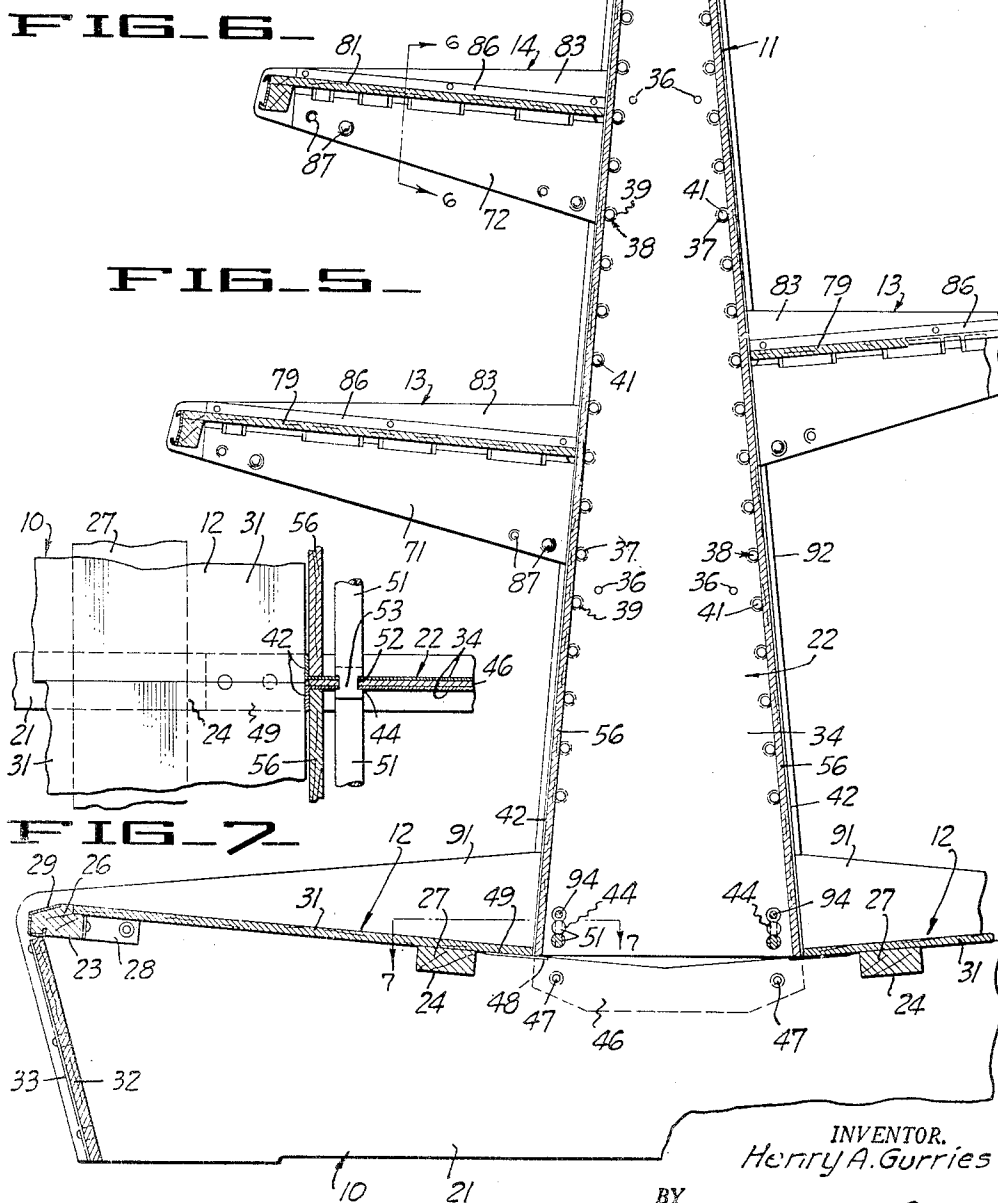
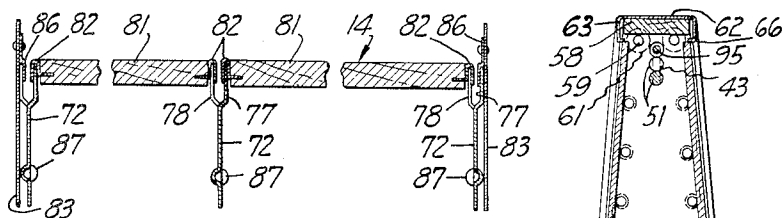
H. A. GURRIES

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SHELVING STRUCTURE

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3 Sheets-Sheet 3



INVENTOR.
Henry A. Gurries

BY

BY *Flaherty & Swain*
ATTORNEYS

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SHELVING STRUCTURE

Henry A. Gurries, San Jose, Calif.

Application February 14, 1949, Serial No. 76,257

1 Claim. (Cl. 211—136)

This invention relates generally to shelving structures such as are suitable for use in merchandise establishments.

The various types of shelving structures which have been available in the past for retail stores and other merchandise establishments, have possessed a number of disadvantages and defects. In some instances the structures are factory assembled in sections which are then shipped for installation in the establishment. This type of construction possesses the disadvantage that it is difficult to ship over long distances, and is difficult to handle and install in the final location desired. It has also been proposed to factory make certain component parts and subassemblies, which are then shipped in knock down form to the establishment for erection where desired. Structures of this character which have been available in the past have required too much time and skilled labor in their erection. In addition to the considerations just mentioned, such shelving structures should have great inherent strength to resist the loads placed upon the shelves, and it is highly desirable to provide utmost flexibility with respect to the height at which sections of the shelving are placed. In other words it is undesirable to provide continuous shelves of a fixed type, extending the entire length of an assembled structure, but it is desirable to be able to place various smaller sections of the shelving at a desired optimum height, which may be changed from time to time as convenience requires. Many shelving structures which have been available in the past have not been sufficiently flexible in this respect, and they have not provided the necessary rigidity and strength to properly support the shelves at the height selected.

In general it is an object of the present invention to provide a shelving structure which is particularly adapted for use in merchandise establishments, and which is featured by the fact that it can be shipped in its component parts and subassemblies, in a relatively compact package, and can be erected where desired with a minimum amount of labor.

Another object of the invention is to provide a shelving structure which is capable of withstanding the relatively heavy usage to which the same may be subjected in merchandising establishments such as grocery stores, and which has wide flexibility with respect to the levels at which the shelving sections may be placed.

Another object of the invention is to provide a novel subassembly of parts for adjustably supporting the shelves, and which affords a high degree of strength, while at the same time permitting application of a shelf at a desired level.

Another object of the invention is to provide a shelving structure in knockdown form having a number of its component parts, particularly parts required to take considerable stress, formed of steel or other suitable metal.

Another object of the invention is to provide a shelving structure having a number of novel features which contribute to ease with which the component parts can be erected.

Additional objects and features of the invention will appear from the following description in which the preferred embodiment has been set forth in detail in conjunction with the accompanying drawing.

Referring to the drawing.

Figure 1 is an elevation, of the end section, showing a shelving construction incorporating the present invention.

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Figure 2 is an end view of the structure shown in Figure 1, with the left-hand portion thereof shown in section and taken along the line 2—2 of Figure 1.

Figure 3 is an enlarged cross-sectional detail taken along the line 3—3 of Figure 2.

Figure 4 is an enlarged cross-sectional detail taken along the line 4—4 of Figure 2.

Figure 5 is a cross-sectional view taken along the line 5—5 of Figure 1.

Figure 6 is an enlarged cross-sectional detail taken along the line 6—6 of Figure 5, and showing particularly the manner in which the shelves are supported by their associated brackets.

Figure 7 is a cross-sectional detail on an enlarged scale taken along the line 7—7 of Figure 5.

The assembled shelving structure constituting the present invention consists generally of a base structure 10, which forms a stable support for the upright structure 11. The base structure provides a counter or shelf 12, and the upright structure 11 serves to support a number of shelves 13 and 14. As illustrated particularly in Figures 2 and 5 the structure is of the so-called gondola type, in that the base 10 extends symmetrically on both sides of the upright structure 11, to form duplicate shelves or counters 12, and the upright structure 11 is formed to enable attachment of shelves 13 and 14 on both sides of the same. It should be understood however that in some instances the parts may not be duplicated, and the structure may be modified for installation against the vertical wall of a building. The parts are adapted for assembly in sections of predetermined length, so that as many sections as desired may be attached together to form a complete shelving structure of extended length.

The base structure 10 consists of wood sills 21 which have a longitudinal distance between their centers corresponding to the length of the sections. These sills can be contoured as illustrated in Figures 2 and 5, and serve to support substantially the entire weight of the structure.

The main structural parts of the upright structure 11 are the web assemblies 22, which likewise have a longitudinal spacing the same as the distance between centers of the base sills 21. The web assemblies 22 are firmly attached to the sills 21, in the manner to be presently described. The upper edge of each sill 21 is shown notched at 23 and 24, to receive the longitudinal tie strips 26 and 27. These strips can be in sections of suitable length, corresponding to the distance between centers of the sills 21, and they can be attached to the sill by suitable means such as nails or screws. At suitable points the forward strips 26 can be attached to the sills by use of metal brackets 28. The forward strips 26 are preferably contoured to receive a metal trim strip 29, in order to enhance the appearance. Suitable panels 31, such as panels made of plywood, are attached at their edges to the sills and to the strips 26 and 27, to form a shelf supporting surface. Additional front panels 32 are attached to the forward edge of the sills 21 and trim strips 33.

Each of the vertical web assemblies 22 consists of duplicate pieces 34 of sheet metal (Figure 3) which in manufacture are retained together by suitable means such as the rivets 36. The side edges of the sheets 34 are provided with regularly spaced openings 37, which are adapted to receive the metal lugs 38. Each of the lugs 38 consists of a central enlarged portion 39 or collar, which forms in effect a spacing collar between the sheets 34, and projecting end portions or studs 41 which are accommodated in the openings 37, and which serve to retain front wall panels as will be presently described. The vertical edges of the sheets 34 are bent to provide the flanges 42, which also serve to retain front wall panels as will be presently described. The upper and lower end portions of each web assembly are provided with keyhole shaped openings 43 and 44 which serve to accommodate tie rods to be presently described.

The attachment between each of these web assemblies 22 and its associated sill 21 makes use of a metal fin 46 (Figures 5 and 7). The lower portion of this fin is accommodated within a slot formed in the sill 21, and is locked in place by bolts 47. The upper projecting portion of each fin is provided with openings contoured in

the same manner as openings 44, to accommodate tie rods and attaching means as will be presently described. The ends of the fin are provided with slots 48, which are engaged by the inner ends of the bearing plate 49. These plates are attached to the sill as by means of nails.

During the erection of the structure the sills 21 are first placed in proper position, after which the sills are connected together by the strips 26 and 27. Then the web assemblies 22 are placed in proper position upon the sills by use of the fins 46 and the webs are then connected together by the tie rods 51 and retained on the same centers as the spacing of the sills. All of the tie rods (or pipes) employed may be of like construction and length. Each rod 51 has its end portion provided with the laterally extending slots 52, thus providing a portion 53 of reduced width which can be accommodated and locked in one of the keyhole contoured openings 44 (Figure 7). It will be understood in this connection that the upper part of each keyhole opening is of such size that the end of a rod 51 can be inserted in the same. The rod may then be lowered into locked position with the associated web, substantially as shown in Figure 7. The keyhole openings 44 are of sufficient depth that two rods can be placed in locked position one above the other. Thus the tie rods for adjacent sections may be staggered in this fashion as shown in Figure 3.

After the erection and tying together of the webs 22, the next operation is to apply the upright wall panels 56, which can be made of suitable material such as plywood. These plywood panels have a thickness corresponding generally to the spacing between the flanges 42 and the adjacent studs 41. With panels which are properly dimensioned, their vertical edges can be inserted between the flanges 42 and the studs 41 by sliding the panels downwardly behind the flanges, from the top of the web assembly. The assembled position of these panels is illustrated in Figure 5. Note that their lower edges bear upon the plates 49, and that they extend substantially the entire height of the structure.

In order to finish the top of the structure, it is desirable to provide a wood filler strip 58, which is in sections of sufficient length to extend between the upper portions of the web assemblies 22. The ends of the strips 58 are shown resting upon studs 59, which may be studs formed upon the ends of lugs like the lugs 38, except for the provision of a larger spacing collar 61. A metal trim cap 62 is shown seated over each filler strip 58. The depending sides 63 of this cap are shown provided with interrupted edges 64, adapted to snap into slots 66 provided in the flanges 42 of the associated web assemblies. This provides a simple and convenient way of applying and retaining the trim cap.

The shelves 13 and 14 are shown supported by the fin brackets 71 and 72, which are identical in construction except for dimensioning. Each fin is formed of a piece of sheet metal contoured substantially as illustrated, and formed to provide means at its larger end for forming a readily removable attachment to the web assemblies 22. Thus as shown in Figure 2 the fin 71 is contoured at its larger end to provide slots 73 and 74 which are adapted to accommodate two adjacent lugs 38, and also to provide a lock finger 76, which is adapted to extend behind and in locking engagement with the lug 38 immediately above that lug which engages the slot 74. Finger 76 is contoured so that when the fin 71 is raised, the notches 73 and 74 disengage with respect to their associated lugs, and thereafter the finger 76 can be lowered from engagement with its associated lug, and then the entire fin retracted. In a similar manner a fin can be applied to the web assembly at any elevation desired.

In order to facilitate attachment of shelf panels to the fin bracket 71, the upper edges of these brackets are slotted as illustrated, and the portions 77 and 78 intervening between the slots are bent laterally in opposite directions (Figures 4 and 6). The supporting surfaces which are carried by the fins 71 and 72, consist of panels 79 and 81, which can likewise be made of plywood, and which can be duplicates except for dimensioning. Substantially U-shaped metal strips 82 are attached to the ends of the panels 79 and 81 (Figure 6) and the strips are adapted to seat over the corresponding aligned lugs 77 and 78 of the fin 72. Where a fin bracket is at the end of a complete assembly, it is desirable to provide it with a finishing and edge forming plate 83. These plates can be dimensioned so that the upper edges of the

same extend somewhat above the upper surface of the shelf panels 79 and 81. Their inner faces are provided with recess forming strips 86, to facilitate attachment to the aligned portions 77, 78 of an adjacent fin, and the lower edge portions may contact struck out portions 87 provided on the adjacent fins, in order to facilitate retention of the finishing strips in a desired vertical position.

The end of a complete assembly of sections should be finished off in such a manner as to cover over the corresponding sill 21 and web assembly 22. Thus at each end a pair of cover boards 91, which can be contoured as shown in Figures 2 and 5 can be attached to the adjacent end sill 21. In addition a cover board 92 is applied over the web assembly 22, and extends to the floor between the boards 91. The lower portion of the board 92 can be rabbeted to receive adjacent edges of the boards 91. The finishing board just mentioned can be held in place by suitable means such as the bolts 93, 94 and 95. Bolts 93 pass through the adjacent sill 21, the bolts 94 pass through the upper ends of the adjacent keyhole openings 44 and web assembly 22, and the bolts 95 pass through the upper end of the keyhole 43, which is at the upper end of the web assembly.

It will be evident that my shelf construction possesses many advantages over the conventional constructions now being employed. All of the various component parts and subassemblies can be completed at the factory, and shipped for quick erection within a store or other merchandise establishment. No skilled labor is required for erection in the store, and erection can be carried out where the shelves are to remain, thus avoiding troublesome moving after erection. As many sections as desired can be erected at the same time, and after erection the various shelves can be adjusted to the height desired, for the various sections, in accordance with the type of merchandise being displayed. After erection the structure is relatively strong, and the shelves are not subject to misalignment or sagging after long usage. The web assembly 22 is sufficiently strong to take substantially all of the stresses applied from the web brackets 71, and the sills 21 in turn are adequate to receive all of the stresses and weight from the web assemblies.

While my invention has been disclosed as applied to a shelf construction of the gondola type, having shelves on both sides of an upright structure, it is evident that principles of the invention can be used in other types of shelving constructions, as for example constructions intended for erection against a vertical wall of a building. For such a structure the web assemblies 22 are provided with a row of lugs 38 along only one side of the same, and the other edges of the fin assemblies are cut vertically to fit in close proximity with a vertical wall.

I claim:

In a shelf construction for carrying merchandise, a shelf supporting bracket, said bracket comprising a sheet of metal having its upper portion slotted, the portions intervening between the slots bent laterally in opposite directions to form a pair of aligned shelf supporting surfaces, a shelf panel adapted to carry merchandise, a U-shaped metal strip on one end of said panel engaging one of said aligned shelf supporting surfaces, a trim plate, recess forming means attached to said trim plate and engaging the other of said aligned shelf supporting surfaces, said trim plate being dimensioned to cover one side of said bracket and to extend above the upper surface of said shelf panel to prevent spillage of merchandise from said shelf panel, struck out portions near the lower edge of said shelf supporting bracket, said struck out portions serving to retain said trim plate in a substantially vertical position.

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