United States Patent

Fenwick

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[54] **SHELF AND BRACKET ASSEMBLY**

[72] Inventor: **Jay G. Fenwick,** Albert Lea, Minn.

[73] Assignee: **Streater Industries, Inc.,** Albert Lea, Minn.

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[52] **U.S. Cl.** **108/1,** 108/152, 108/108

[51] **Int. Cl.** **A47f 5/12**

[58] **Field of Search**.....108/102, 106, 107, 150–155, 108/1

[56] **References Cited**

UNITED STATES PATENTS

239,909	4/1881	Woodward	108/152
2,783,961	3/1957	Weber	108/108 H X
1,677,764	7/1928	Gloekler	108/152 UX
2,639,817	5/1953	Ehret	108/152
2,973,869	3/1961	Raymond	108/152 X
2,959,297	10/1860	Larson	108/152 X
3,111,916	11/1963	Bjerke	108/152
3,220,363	11/1965	Gingher	108/152 X
3,565,020	2/1971	Schier	108/152

Primary Examiner—Bobby R. Gay
Assistant Examiner—Glenn O. Finch
Attorney—Alan C. Rose, Walter R. Thiel and Alfred B. Levine

[57] **ABSTRACT**

The invention relates to a shelf and bracket assembly of the type in which the bracket has hooks which are adapted to fit into slots of vertically extending support standards. The invention is directed to fastening means for attaching the shelf to the brackets which fastening means are incorporated in the design of and are integral parts of the bracket and shelf members.

2 Claims, 4 Drawing Figures

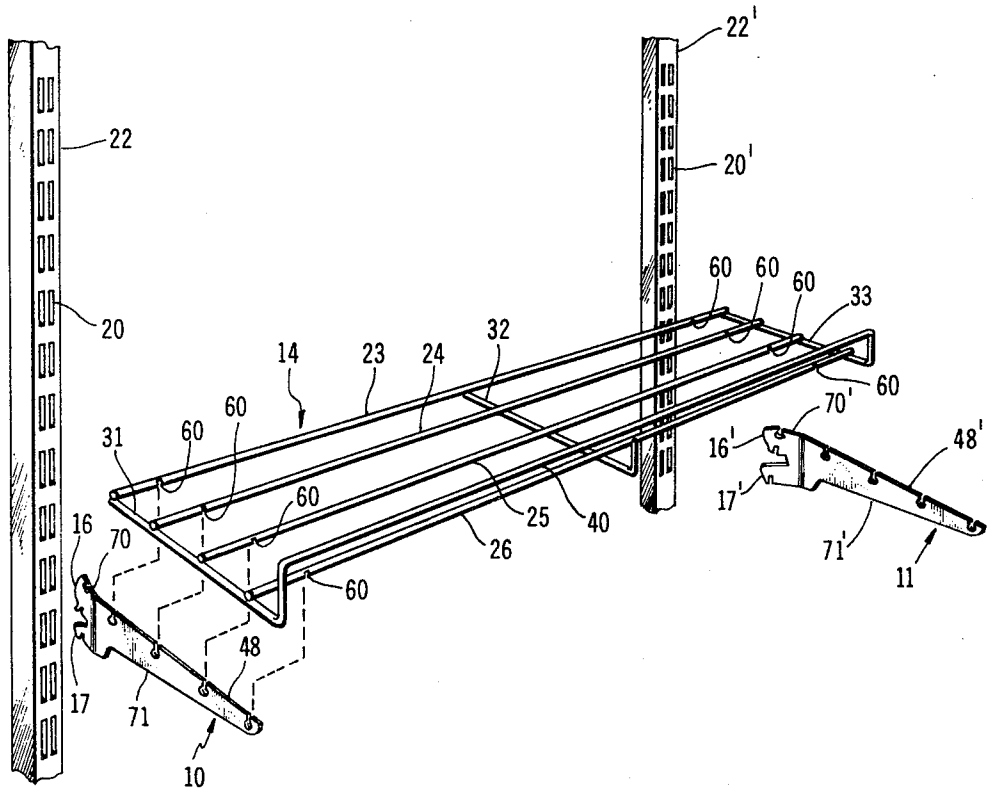


Fig 3

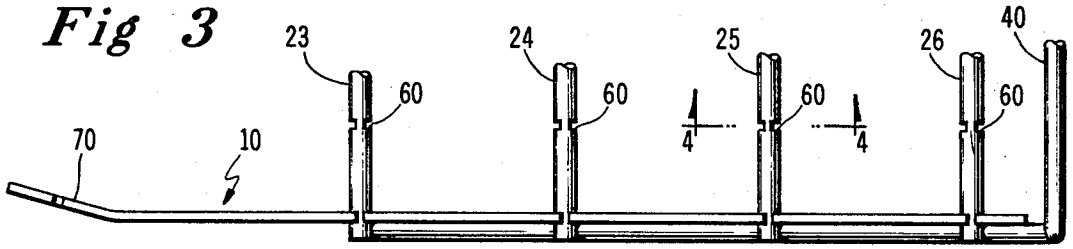


Fig 2

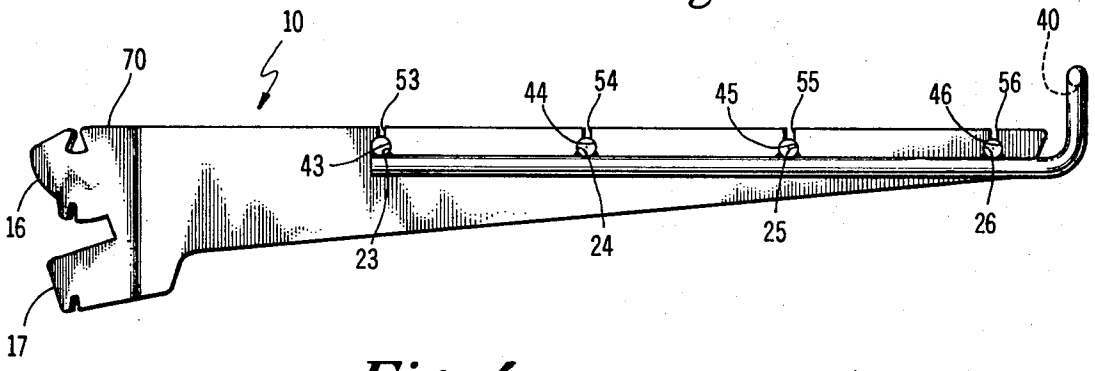


Fig 4

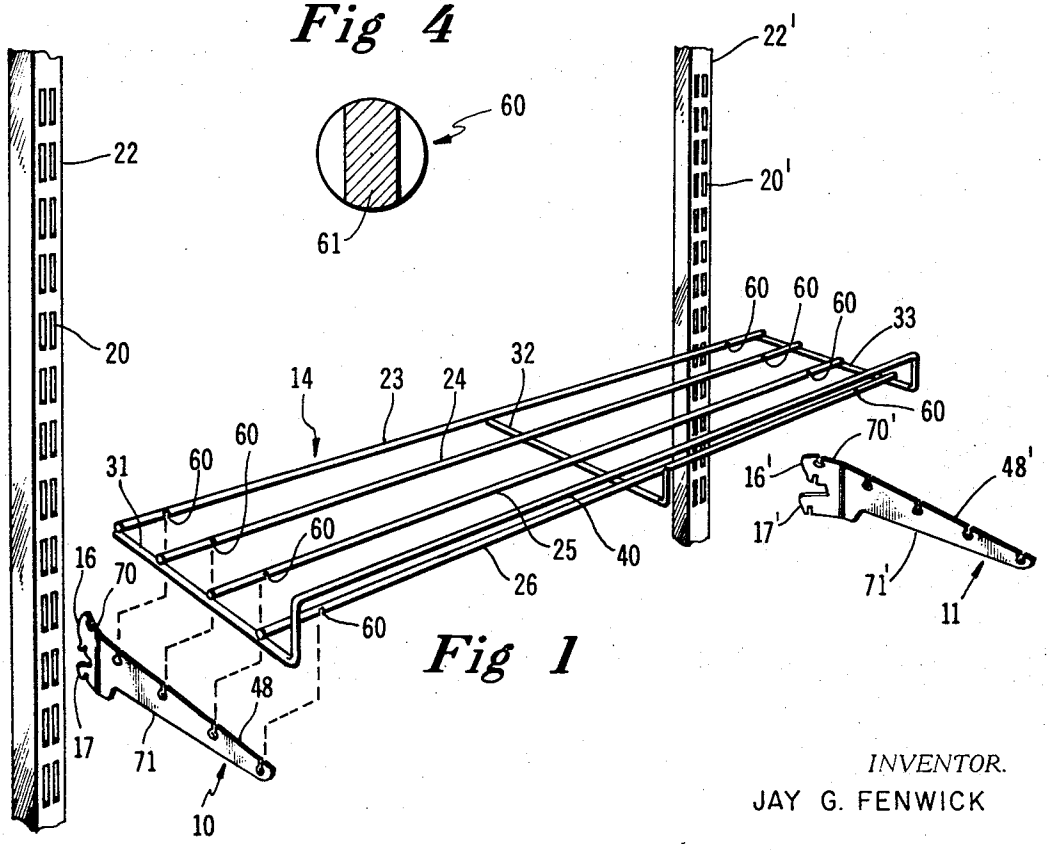


Fig 1

INVENTOR.
JAY G. FENWICK

SHELF AND BRACKET ASSEMBLY

The invention relates to a new and improved shelf and bracket assembly of the type in which the bracket has hooks which are adapted to fit into slots of vertically extending support standards. The shelf is of the wire type and prior art clip and screw type fastening means for attaching the wire shelf to the brackets have not been satisfactory.

A main object of the invention is to provide a new and improved shelf and bracket assembly having new and improved fastening means for attaching a wire type of shelf to the supporting brackets which fastening means are incorporated in the design of and are integral arts of the bracket and shelf members.

Another object of the invention is to provide such an assembly which includes fastening means wherein the shelf is adjustable inwardly and outwardly relative to the brackets. Still another object is to provide such fastening means which are integral parts of the shelf and brackets to be united and which require no tools to assemble the shelf and brackets. A further object, related to the last mentioned object, is that of achieving a substantially and relatively rigid structure wherein the shelf is precluded from moving in any direction relative to the brackets.

Other objects and advantages of the invention will become apparent from the following specification, drawings and appended claims.

In the drawings:

FIG. 1 is an exploded perspective view of a shelf and bracket assembly in accordance with the invention which is attachable to vertically extending, slotted standards which are mountable on a wall;

FIG. 2 is a side elevational view of the assembly shown in FIG. 1;

FIG. 3 is a fragmentary plan view of the assembly shown in FIG. 2;

FIG. 4 is an enlarged, fragmentary sectional view taken on line 4—4 of FIG. 3.

Referring to the drawing, there is shown in FIG. 1 an exploded perspective view of a bracket and shelf assembly comprising brackets 10 and 11 and a shelf 14. Brackets 10 and 11 are each formed from sheet metal as by stamping and, except for certain modifications in accordance with the invention are generally similar to other known brackets of this type. Brackets 10 and 11 have the same construction or design except that in one respect one is the mirror image of the other. A description of one will therefore constitute a description of the other except for the difference referred to. Parts of bracket 11 which correspond to parts of bracket 10 will be identified with the same reference numerals except that a prime designation will be added.

Bracket 10 (or 11) has a shape which is generally triangular and the vertical side thereof is provided with two hooks 16 and 17. Hooks 16 and 17 are adapted to be hooked into the vertically aligned slots 20 of a vertically extending support or standard 22 in a known manner. Two or more brackets 10 and 11 so mounted, at equal heights, function to provide supports for a shelf such as the shelf 14. The particular hooks 16 and 17 which are known per se allow the shelf 14 to be optionally positioned so to be in a horizontal plane or to slant downwardly from the standards 22 and 22'.

A shelf supported by two or more brackets as described above would still be free to move in longitudinal and transverse directions unless fastening means are provided to prevent or limit movements of the shelf relative to the brackets in those directions. Shelf fastening means of that type normally pose a problem, however, because they are usually either unsightly or expensive, or both. In the present invention fastening means are provided for preventing longitudinal, transverse and vertical movements of the shelf 14 relative to two or more brackets 10 and 11 which fastening means comprise integral parts of the shelf and supporting brackets.

Shelf 14 may have different forms and shapes. In the illustrated embodiment of the invention there are a plurality of parallel, longitudinally extending rods 23 to 26 which are in the same general plane. The longitudinal rods 23 to 26 are held or maintained in spaced relation by transversely extending, spaced apart rods 31 to 33 which are illustrated as being beneath and welded or or brazed to the rods 23 to 26. The rods 31 to 33 are illustrated as being integrally joined to a slightly elevated longitudinally extending rod 40. Rod 40 has no material bearing on the invention and its only function is that of a railing which retains or prevents merchandise from falling off the shelf 14.

Each of the brackets 10 and 11 has a plurality of transversely extending circular holes 43 to 45 which have the same lateral spacing as the rods 23 to 26, are spaced uniformly short distances below the bracket edge 48, and are all disposed in a single, general plane. Slots 53 to 55 of lesser widths than the diameters of holes 43 to 45 extend respectively from these holes to the bracket edge 48 to form recesses having the appearance of inverted keyholes.

Each of the shelf rods 23 to 26 has, between each pair of adjacent rods of the transverse rods 31 to 33, a narrowed section 60 having the same nominal width as the bracket slots 53 to 55. A typical or representative section 60 is shown in FIG. 4 and in effect constitutes a generally rectangularly shaped portion 61 which remains after milling cuts are made on both sides thereof if that happens to be the method used to form the narrow neck portion 61.

The function or purpose of the narrowed sections 60 is to allow the shelf 14 to be joined to the two brackets 10 and 11. Bracket 10, for example, is attached to the shelf 14 by first registering the slots 53 to 55 with the narrowed sections 60 of rods 23 to 26 between the adjacent rods 31 and 32. Bracket 10 is subsequently moved upwardly until the rods 23 to 26 seat respectively in the holes 43 to 45 and then longitudinally in either direction away from the narrow sections 60. The location of narrow sections 60 is not critical except that the spacing between such sections on each of the rods 23 to 26 should be more or less than the spacing between the standards 22 and 22' so that a bracket 10 or 11 does not remain in contact with a group or row of sections 60.

Shelf 14' is adjustable relative to the brackets by utilizing different holes 43 to 46 for the rods 23 to 26. If the goods to be supported by the shelf are bulky and not too heavy, the shelf could be brought forward with the rods 23 and 24 being disposed in the holes 45 and 46 instead of as illustrated.

Brackets 10 and 11 are bent at their inner ends in a manner such that the hook portions 70 and 70' thereof each forms an angle of about 15 degrees, respectively, with the main body portion of the bracket. In this respect one bracket is the mirror image of the other because, as illustrated, the bracket portions 70 and 70' are bent inwardly relative to each other.

When the bracket 10 (or 11) is installed between a standard 22 and the shelf 14, the inner portion 70 of the bracket tends to align with the outer portion 71 so as to reduce or eliminate the 15 degree angle therebetween. This creates a resilient torsional stress between the bracket portions 70 and 71 which produces a resilient biasing force that serves to snugly attach the bracket to the shelf. Each bracket attaches individually to the shelf and thus it presently appears optional whether the inward portions 70 and 70' bend inwardly towards or outwardly away from each other. Two brackets having the shape of bracket 10 (or two brackets having the shape of bracket 11) could be used together as far as function is concerned but the appearance of the asymmetrical arrangement may have a nonsalutory effect from the aesthetic standpoint.

I claim:

1. A shelf and bracket assembly adapted to be attached to a pair of vertically extending standards comprising, at least two brackets each having a hook portion and a body portion forming an acute angle of approximately 15° with said hook portion when said bracket is in an unloaded condition, said body portion having transversely extending, generally circular holes near the top edge thereof, slots extending respectively between said holes and said top edge of said bracket, shelf means including longitudinally extending rods, said rods each being generally circular with a diameter substantially equal to the diameter of said hole, said rods each having a neck section of substantially the same width as said slots to allow entry of said rods into said holes, and at least two rods extending transversely of and attached to said longitudinally extending rods, said transversely extending rods being located near different ends of said longitudinally extending rods whereby upon attachment of said brackets to said vertically extending standards a resilient torsional stress is applied by each of said brackets to the rods of said shelf means to rigidly attach said shelf means to said brackets to form said assembly.

2. A shelf and bracket assembly according to claim 1 wherein said hook portion includes hook means which optionally allows more than one mounting position for said bracket.

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