United States Patent [19]

David

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[54] **MERCHANDISE DISPLAY APPARATUS**

[76] Inventor: **Melvin J. David,** 16221 Quemada Road, Encino, Calif. 91316

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[52] **U.S. Cl.** **211/153**

[51] **Int. Cl.** **A47f 5/14**

[58] **Field of Search**..... 211/153, 134, 128, 211/148, 181, 176, 133; 108/107-111; 248/153, 157, 175, 188.5, 188.2

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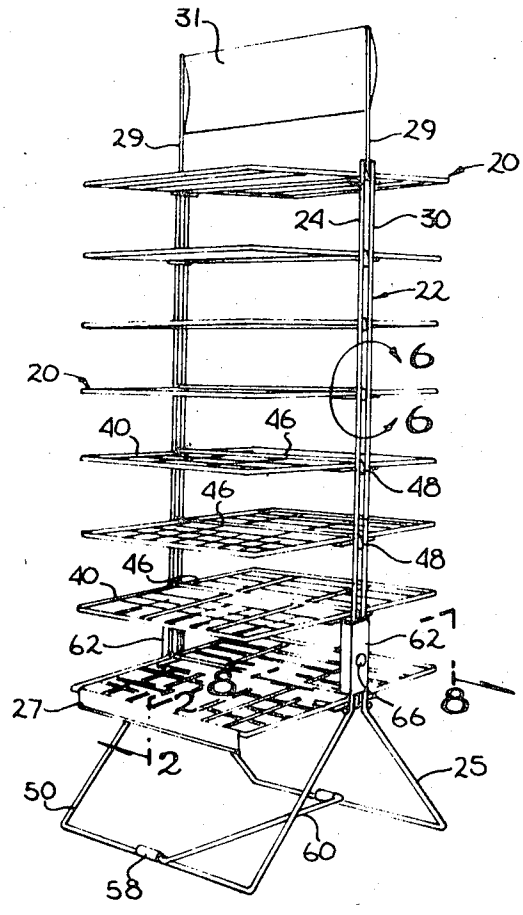
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Primary Examiner—Ramon S. Britts
Attorney—Spensley, Horn & Lubitz

[57] **ABSTRACT**

A merchandise display apparatus having an upright structure supporting a plurality of shelves thereon and having a stand attachable to the upright structure at various positions. The upright structure has a pair of parallel, vertically disposed rods at each side of the structure, each of the rods being maintained in parallel separation by horizontal spacer members. Each of the shelves fits between the two sides of the upright structure and has a rod protruding over the side of the shelf and bent downward so as to be insertable between the pair of parallel rods on each side of the upright structure. Thus, the shelves are supported in vertical disposition by the horizontal spacers and maintained in a horizontal attitude by the engagement of the downward projecting rods on each side of the shelves with the parallel spaced apart rods on each side of the upright structure. A plastic extruded member for attachment to the shelves and for displaying merchandise information is also disclosed.

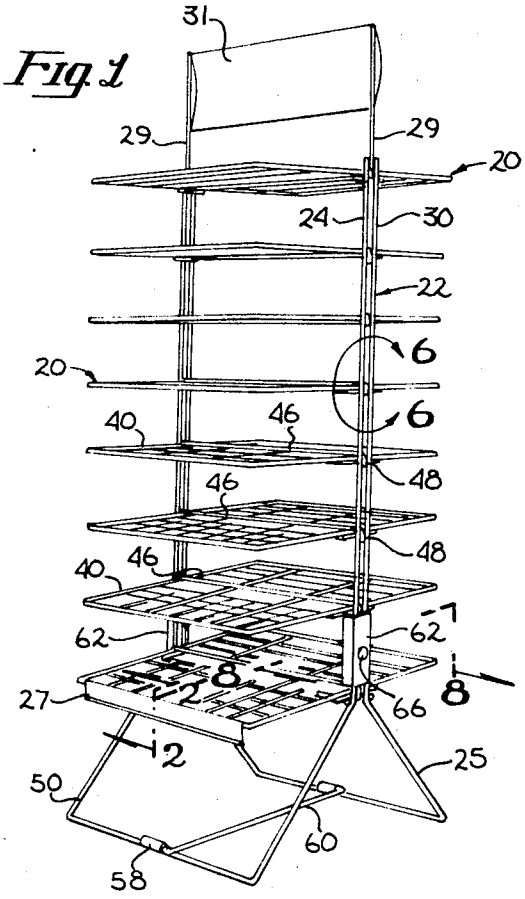
4 Claims, 8 Drawing Figures



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Fig. 1



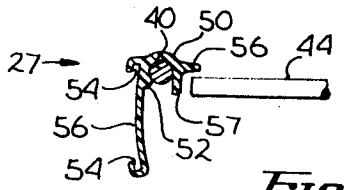


Fig. 2

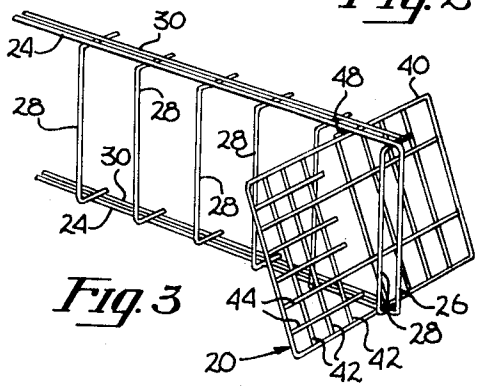


Fig. 3

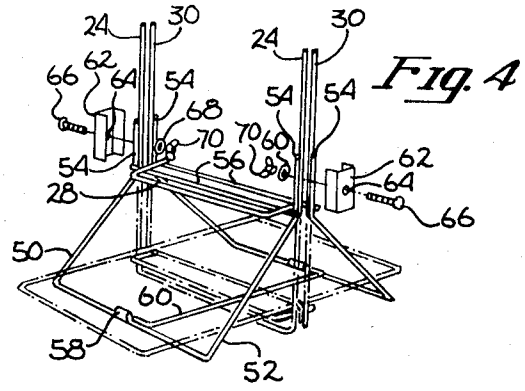
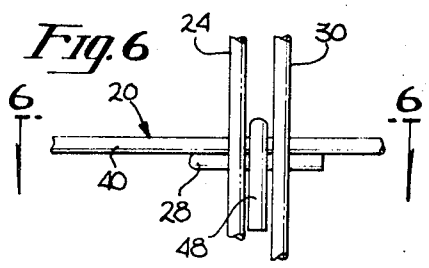


Fig. 4

Fig. 6



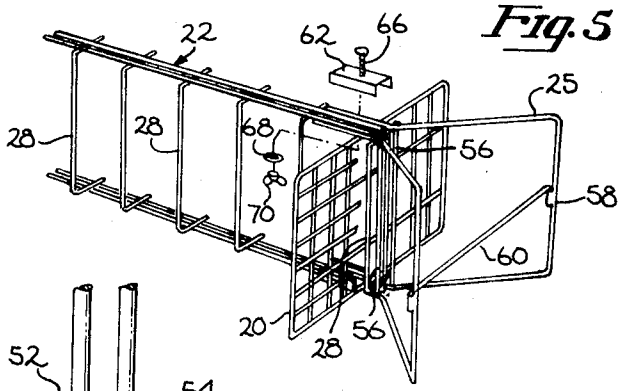


Fig. 5

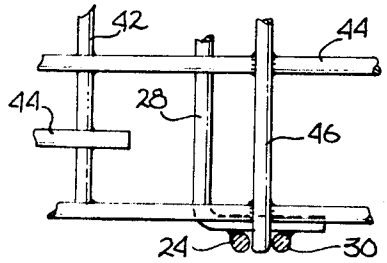


Fig. 7

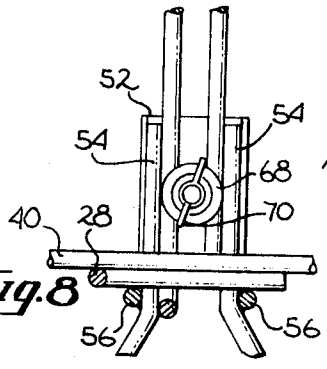


Fig. 8

MELVIN J. DAVID
INVENTOR.

BY Spensley, Horn & Lubitz
ATTORNEYS

MERCHANDISE DISPLAY APPARATUS

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to the field of merchandise display apparatus.

2. Prior Art

With the increasing importance of commercial merchandising, it is becoming evident that better structures are needed to permit the merchandiser to more efficiently and effectively display his wares. In addition, the ability to easily transport and assemble a display apparatus is also important since the cost of packaging and shipment of the display apparatus, and the value of the time spent in assembling the apparatus, must both be considered as part of the cost of using the apparatus.

The devices disclosed by the prior art for displaying merchandise are typically cumbersome structures which require prefabrication of the total structure, or which have a multitude of small parts, such as clips, screws, etc., which require complex assembly procedures at the site where it is to be utilized. The multitude of small parts, such as screws, fasteners, and the like, are time consuming to assemble and are subject to inadvertently coming apart when in use or to misplacement and loss when the display apparatus is temporarily stored. Furthermore, such racks, even in the disassembled state, tend to be bulky, heavy and readily damaged, both in shipment and in use. Thus there is needed a simple, easily assembled merchandise display apparatus, preferably of generally open construction for display of merchandise of all kinds. In addition prior art devices are generally of predetermined height, with devices designed to be placed on a floor not being suitable for use on a box or counter, and vice versa. Therefore there is also needed a merchandise display apparatus of variable height which may be assembled for use as a floor, box or counter merchandise display.

BRIEF SUMMARY OF THE INVENTION

A merchandise display apparatus having an upright structure supporting a plurality of shelves of generally open construction, and having a stand attachable to the upright structure at various positions for varing the height of the merchandise display apparatus. The upright structure has a pair of paralled, vertically disposed rods at each side of the structure, each pair of the rods being maintained in parallel separation by horizontal U-shape members welded to the rods at various vertical positions along the rods. The shelves are also of wire construction having an outer rectangular wire member defining the outer edge of the shelf and the plurality of cross wire members defining a generally open shelf structure. The shelves have plastic strips attached thereto normally disposed to display merchandise information but which may be rotated so as to lie flat against the shelf for storage and shipment purposes.

Each of the shelves fit between the two sides of the upright structure and has a rod protruding over the side of the shelf and bent downward so as to be insertable between the pair of parallel rods on each side of the upright structure. Thus the shelves are supported in vertical disposition by the horizontal U-shaped spacers and are maintained in a horizontal attitude by the engagement of the downward projecting rod on each side of the shelf with the parallel spaced apart rods on the upright structure. The stand is comprised of U-shaped

wire members bent in such a manner as to dispose the legs of the U shaped members in side by side relationship with the members defining the upright structure, and is clamped to the upright structure by appropriate clamps.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the merchandise display apparatus of the present invention.

FIG. 2 is a cross-section taken along lines 2 — 2 of FIG. 1.

FIG. 3 is a perspective view of the upright structure and one of the shelves illustrating structural details and the manner of assembly of the shelves and the upright structure.

FIG. 4 is a perspective view of illustrating an alternate position for assembly of the stand to the upright structure.

FIG. 5 is a perspective view illustrating the assembly of the stand to the upright structure at the position illustrated in FIG. 1.

FIG. 6 is a view taken along line 6 — 6 of FIG. 1 on an expanded scale, illustrating the engagement of a shelf with the upright structure.

FIG. 7 is a partial cross-sectional view taken along lines 7 — 7 of FIG. 6.

FIG. 8 is a view taken along lines 8 — 8 of FIG. 1 illustrating the engagement of a stand with the upright structure.

DETAILED DESCRIPTION OF THE INVENTION

First referring to FIG. 1, a perspective view of the merchandise display apparatus of the present invention may be seen. The display apparatus is characterized by a plurality of shelves 20 supported by an upright structure 22 which in turn is maintained in an upright position by a stand, generally indicated by the numeral 25, which attaches to the lower portion of the upright structure 22. A plastic extruded strip 27 is adapted to snap over the edge of the shelves 20 to display information regarding the merchandise on the shelf, such as prices, part numbers, etc. For purpose of clarity, only one such plastic strip 27 is shown in FIG. 1, though it is to be understood that such plastic strips are, in general, used with any and all shelves 20 on the display apparatus and may be used in varying lengths and/or locations on the shelves for such display purposes. Also, extending upward from the top of the upright structure 22 are two wire members 29 for supporting advertising material on a card generally indicated by the numeral 31.

Now referring to FIG. 3, some of the details of the construction of the shelves 20 and the upright structure 22 may be seen. Both the shelves and the upright structure are formed by the appropriate cutting, bending, and welding of steel wire. It is to be understood that the term "wire" as used herein, is used in the general sense to indicate a cylindrical wire rod of appropriate diameter (e.g. of substantial stiffness) and not a small diameter wire as is commonly available on small spools. The upright structure 22 is comprised of a U-shaped wire member having legs 24 and a base or cross member 26. Welded to the U-shaped member are smaller U-shaped members 28 which fit between the legs 24 and which are disposed in substantially equally spaced horizontal position when the upright structure 22 is in its functional disposition as shown in FIG. 1. Also welded to

the U-shaped members 28, in spaced parallel relationship to legs 24, are wire members 30.

Wire racks 20 have an outer rectangular wire member 40 of the width substantially equal to U-shaped members 28. The shelf area of the shelves 20 is defined by a plurality of cross wire members 44 welded to the cross wire members 42 and running at least part of the length of the shelf 20. For reasons about to become apparent, wire members 44 are not attached to the rectangular wire member 40, but instead terminate at positions adjacent to the rectangular wire member. Also welded to the rectangular wire member 40 is a wire member 46 having ends 48 which are bent around the edge of the rectangular member 40 and project downward in a substantially parallel relationship.

Now referring to FIG. 2, a cross-section taken along lines 2 — 2 of FIG. 1 may be seen. This figure shows a cross-section of the plastic strip 27 as it snaps over the front edge of a shelf 20. Plastic strip 27 is characterized by an inverted U-shaped section 50 with a protrusion 52 for locking the plastic member onto the rectangular wire member 40, a pair of facingly disposed channels 54 for receiving a card containing pricing information, etc., and a rearward extending protrusion 56 and a downward extending protrusion 57 disposed so as to engage the wire members 44 to resist rotation of the plastic strip 26 on the rectangular wire member 40 with respect to the shelf surface. However, the flexibility of the plastic and of the ends of wire members 44 allows the plastic strip to be caused to lie flat against the shelf for shipment and storage purposes by forcing the plastic strip to rotate on wire member 40 by 90° in a counterclockwise direction, as viewed in FIG. 2. The surface 56 of plastic strip 26 between facingly disposed grooves 54 is convex in shape so that the card or numerals placed within the grooves 54 will be forced to take a slight curvature, (and/or the plastic strip will be forced into a flatter condition) thereby preventing longitudinal slippage of the material placed therein and resulting in improved visability thereof. The plastic strip 27 is an extruded member, and may be readily cut to the desired lengths for use with the display apparatus.

Now referring to FIG. 6 and 7, the manner in which the shelves engage and are supported by the upright structure may be seen. FIG. 6 is a view of the area surrounded by line 7 — 7 of FIG. 1, taken on an expanded scale, and FIG. 7 is a view taken along lines 7 — 7 of FIG. 6, as previously described. The legs 24 of the U-shaped member and wire members 30 are welded to one of the U-shaped members 28 so as to be supported in a parallel relationship with a spacing slightly larger than the diameter of the ends 48 of the wire members 46. When a shelf is in position on the upright structure, the rectangular wire member 40 rests on a U-shaped wire member 28, and the ends 48 of wire member 46 project downward between the legs 24 and wire members 30. Thus, vertical support is provided by the U-shaped wire members 28 and rotation of the shelves about a horizontal axis is prevented by the engagement of the ends 48 of the wire members 46 with the legs 24 and wire members 30.

Now referring to FIGS. 4, 5, and 8, details of the stand 25 and the manner of attachment of the stand to the upright structure 22 may be seen. The stand 25 has two U-shaped wire members having bases 50 for disposition in spaced apart relation on the surface on which the display apparatus is to be supported. Projecting upward at an angle from the bases 50 are legs 52, with the ends 54 of legs 52 bent vertically upward into parallel disposition with the members comprising the upright structure. A cross wire member 56 is welded to the ends 54 of the U-shaped wire member at a position adjacent the bend between the ends 54 and the legs 52. A short tubular member 58 is welded to each base 50 of the U-shaped wire members at the mid-point of the base so that the ends of U-shaped wire members 60 may be inserted into the cylindrical members 58 to prevent further separation of the bases 50 of the U-shaped wire member due to the weight of items placed on the shelves 20.

Channel members 62 are adapted to fit over legs 24 and wire members 30, and each have a centrally disposed hole 64 there through for receiving screws 66. The diameter of screws 66 is substantially the same as the diameter of ends 48 on the wire members 46. Thus, screws 66 are adapted to pass between legs 24 and wire members 30 and to clamp these members to the channel member 62, by means of washer 68 and wing nuts 70. Thus channel members 62 and washers 68 define a substantially rectangular opening therebetween receiving and retaining in parallel relationship ends 54, legs 24, and wire members 30 as may best be seen in FIG. 8.

With the stand in place on the upright structure 22, one of the U-shaped members 28 on the upright structure rests on cross members 56, as may be seen in FIG. 8, thereby preventing vertical slippage of the upright structure with respect to the stand. The rectangular wire member 40 of one of the shelves 20 rests on one of U-shaped members 28 just below wing nuts 70. Thus the attachment of the stand member 25 to the upright structure 22 does not interfere with the placement of any of the shelves on the upright structure. Also since the height of cross members 58 on the stand 25 is slightly greater than two shelf separations, the stand may be assembled to the upright structure 22 at any of the three positions. Thus the U-shaped member 28 shown in FIG. 8 may be the U-shaped member supporting the lowest shelf as shown in FIGS. 1 and 5, may be the U-shaped member supporting the next to lowest shelf, or maybe the U-shaped member supporting the third shelf from the bottom, as suggested in the representation in FIG. 4.

Having now defined the detail structure of the merchandise display apparatus of the present invention, the method of assembling the apparatus shall now be described. The first step in assembling is to install a shelf on one of three lower U-shaped members 28 at which position the stand will be supported. Thus if the stand is to be assembled in the position shown in FIG. 1 and 5, a shelf will be installed on the upright structure so as to rest against the lowest U-shaped member 28 on the upright structure. The shelf is inserted into the upright structure by tilting the shelf and inserting it between the normally vertically disposed portions of the upright structure, as shown in FIG. 3, and thereafter moving the shelf into contact with the U-shaped member 28 which will support the shelf, with the ends 48 inserted between legs 24 and wire members 30. The stand 25 is then assembled by inserting U-shaped member 60 into the tubular members 58 and by attaching the stand to the upright structure by means of channel members 62 so that cross bars 56 engaged the lower surface to U-shaped member 28 supporting the first shelf (it is nec-

essary to install this first shelf before attaching the stand to the upright structure because the protrusion of screws **66** and of wing nuts **70** interfers with the later assembly of that shelf). Once the first shelf and the stand have been assembled to the upright structure, the apparatus maybe placed in its normal functional position for assembly of the rest of the shelves, for placement of plastic strips **27** onto the shelves as desired and for attachment of the display card **31** at the top of the upright structure.

The preferred embodiment is fabricated of steel wire having a diameter of ranging from one-eigth of an inch for wire members **42** and **44** on the shelves **20,** to one-fourth of an inch for the wire members **46** (and ends **48** thereof). Steel wire is used because of its low cost, weldability and strength, thereby resulting in a low cost, easily assembled merchandise display apparatus of variable height depending upon the requirements of a particular application.

I claim:

1. An apparatus for displaying merchandise comprising:

an upright structure having first and second vertically disposed members in closely spaced apart fore and aft relationship adapted to receive an engaging member therebetween and defining a first side of said structure, third and fourth vertically disposed members in closely spaced apart fore and aft relationship adapted to receive an engaging member therebetween and defining a second side of said structure, and a plurality of spacer members secured to and extending between said first and second vertically disposed members of each of said upright structure maintaining said vertically disposed members in their respective relationships, means supporting said upright structure in a vertical position;

a plurality of shelf means disposed in a horizontal position between said first and second sides of said upright structure and vertically supported by said spacer members, each of said shelf means having a single engaging member comprising a unitary wire extending beyond each of two opposite sides of said shelf means and projecting downwardly from substantially the middle of each of said sides, each of said engaging members engaging and being supported by one of said spacer members, one of said engaging members on each of said shelf means disposed between said first and second vertically disposed members, and the other of said engaging members on each of said shelf means disposed between said third and fourth vertically disposed members, the spacing between said first and second vertically disposed members and between said third and fourth vertically disposed members being at most only slightly greater than the diameter of the wire defining said engaging members to prevent said shelf means from tipping by the interference of said engaging members with said vertically disposed members.

2. The apparatus of claim **1** wherein said plurality of spacer members are a plurality of U-shaped spacer members with one leg of each of said spacer members attached to said first and second vertically disposed members and the second leg of each of said spacer members attached to said third and fourth vertically disposed members.

3. The apparatus of claim **1** wherein said means supporting said upright structure in a vertical position comprises a stand and a clamping means, said stand having a base and first and second upward projecting members in fore and aft spaced apart relationship for receiving said first and second vertically disposed members therebetween, and third and fourth upward projecting members in fore and aft spaced apart relationship for receiving said third and fourth vertically disposed members therebetween, said clamping means being adapted for locking said first and second upward projecting members to said first and second vertically disposed members and for locking said third and fourth upward projecting members to said third and fourth vertically disposed members at various positions so as to yield an apparatus for displaying merchandise of adjustable height.

4. The apparatus of claim **3** wherein said stand is comprised of first and second stand members and a stand spacer, said first and second stand members each supporting two of the four said upward projecting members and defining legs on which said apparatus stands, said stand spacer engaging said stand members legs and maintaining them in fixed spaced apart relation.

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