DISPLAY RACK WITH SPIRAL SHELVES

ABSTRACT: The invention relates to a display rack for displaying merchandise articles. The rack comprises a base, a vertically extending shaft attached to the base, and a plurality of shelf units having collar or spacer elements which allow the shelf units to be vertically stacked on the shaft. The collar or spacer elements are provided with indexing means which comprise interengaging projections and recesses, or tabs and slots, which function to provide a spiral arrangement for the shelf units relative to the axis of the vertically extending shaft.
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This invention relates to improvements in display racks and has for its main objects the providing of a display rack which is inexpensive to manufacture, is easily assembled and has an aesthetic appearance by reason of a novel indexing feature which facilitates a spiral type shelving arrangement.

Other objects and features of the invention will become apparent by reference to the following specification and to the drawings.

In the drawings:

FIG. 1 is a perspective view of a display rack embodying a novel shelf spacer arrangement in accordance with the invention.

FIG. 2 is an exploded perspective view showing the relationship and indexed positions of adjacent shelf spacers; and

FIG. 3 is a perspective view of one of the shelf spacers with a shelf attached thereto.

Referring to the drawing, there is shown in FIG. 1 a perspective view of a display rack embodying the invention. The rack has a base which includes a hub 10 and four downwardly inclined legs 11. Attached to and extending vertically upwardly from the base hub 10 is a cylindrically shaped shaft 13 to which a sign 15 or the like may be removably attached. A number of shelves are mounted on and supported by shaft 13 by means of a corresponding number of identically shaped indexing shelf spacers 21 to 30. As shown most clearly in FIGS. 2 and 3, each of the spacers is cylindrically and annularly shaped and has an arc shaped recess A at the lower end thereof and an arc shaped projecting portion B at the upper end thereof. The circumferential length of the arc shaped recesses A are respectively equal to the circumferential lengths of the arc shaped projecting portions B. The circumferential length of a recess A or a projection B may vary within the scope of the invention although it is essential that mating or nesting pairs of recesses A and projections B have equal circumferential lengths to facilitate the nesting and interlocking of adjacent spacers in nonrotatable relation relative to each other. Another way of referring to the relative sizes and shapes of recesses A and projections B is that they are complimentary relative to each other such that the projections conform to the sizes of the recesses in which they are disposed.

The shelf spacers 21 to 30 are stacked on the shaft 13 as illustrated in FIG. 1 with the upper projecting portions B of the spacers being disposed in the lower recesses A, respectively, of adjacent spacers. Each of the spacers 24 to 30 has a sector shaped shelf fittedly attached thereto as by welding or by the like and, as illustrated, a plurality of such shelves 41 to 50 are provided respectively for the spacers 24 to 30.

It is a feature of the invention that the sector shaped shelves be spirally arranged on and relative to the shaft 13 for aesthetic as well as utilitarian reasons. In the illustrated embodiment of the invention, and as best seen in FIG. 1, each of the sector shaped shelves 41 to 50 has a subtended angle of 120° so that each shelf is one-third of a circular shelf. In obtaining a spiral arrangement for the shelves the recess A of each spacer is angularly displaced 120° from the projection B of the same spacer. This is indicated in FIG. 2 in which there is shown a central spacer axis 53 and longitudinally extending reference lines 54 and 55 which lie in the external cylindrical surface and indicate the indexed positions of the spacer recess A and the spacer projection B, the illustrated subtended angle being 120°.

As mentioned above, the spacers 21 to 30 are identical to each other. Likewise, the shelves 41 to 50 are illustrated as being attached to the respective spacers at exactly the same corresponding points on the spacers. As illustrated in FIG. 3, this point in each instance may be on the longitudinal reference line 55 midway between the top and bottom of the spacer. The point decided upon for attachment is of course arbitrary but the advantage of attaching the shelves at the same corresponding points on the spacers permits the manufacture of identical shelf spacer assemblies or units at a lower cost than if the shelves had to be attached at different points on the spacers.

In assembling the display rack illustrated in FIG. 1, shelf spacer units as illustrated in FIG. 3 are stacked one by one, starting at the base hub 10, to any desired height. The indexing relationship between the spacer recesses A and spacer projections B causes each shelf to be displaced or advanced 120° relative to the preceding shelf such that a spiral shelf pattern is formed. If desired the base hub 10 could be provided with a lug or the like (not shown) for reception in the recess A of the spacer of the lowermost shelf unit and this would prevent rotation of all other shelves relative to the axis 53. In the absence of such a lug or equivalent device, all of the shelves will revolve as a single unit about the axis 53 and this may be desired in certain installations in which sales appeal can be increased by allowing prospective customers to rotate the shelves to more easily view a variety of products contained on the shelves.

In the illustrated embodiment of the invention the shelves 41 to 50 are sector shaped and each shelf is one-third of a full circular shelf. The indexing relationship between the spacer recesses A and spacer projections B is 120° and this indexing yields a spiral shelf arrangement having three shelves per cycle. Thus after three shelf units have been placed on the shaft 13, the fourth shelf unit 47 will be angularly aligned with the first shelf 50, the fifth shelf 46 will be angularly aligned with the second shelf 49, and the sixth shelf 45 will be angularly aligned with the third shelf 48.

Other indexing arrangements may be used which are also fractional multiples of 360°. Thus 180° indexing would provide two shelves per cycle, 90° indexing would provide four shelves per cycle, 72° indexing would provide five shelves per cycle, and so on. Indexing arrangements which are not fractional multiples of 360° are also within the scope of the invention but such arrangements would not yield the advantage of an even number of shelves per cycle. An indexing arrangement of 144°, for example, would yield two and one-half shelves per cycle, or five shelves every two cycles. The sector size of the shelves may preferably correspond to the specific indexing arrangement used for the spacers but this is not essential within the scope of the invention.

While one embodiment of the invention is described here, it will be understood that it is capable of modification, and that such modification, including a reversal of parts, may be made without departure from the spirit and scope of the invention as defined in the claims.

I claim:

1. A shelf unit for a display rack assembly of the type having a base and a cylindrically shaped shaft extending vertically from said base, said shelf unit comprising a cylindrically shaped spacer member having a bore with the same nominal diameter as said shaft, said spacer member having a recess at one end thereof and a complementary shaped projecting portion extending from the other end thereof, said projecting portion being angularly displaced from said recess a predetermined number of degrees, a generally sector shaped shelf attached to said spacer member, said shelf having a subtended angle no greater than 180°.

2. A shelf unit according to claim 1 wherein said predetermined angle is 120° and said subtended angle is 120°.