

- [54] **DISPLAY RACK WITH ANNULAR MOUNTING RING**
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- [63] Continuation of Ser. No. 633,045, April 29, 1967, abandoned.
[52] U.S. Cl.211/177
[51] Int. Cl.A47f 5/10
[58] Field of Search ..211/177, 70, 24, 178; 108/159; 248/188.7; 287/2

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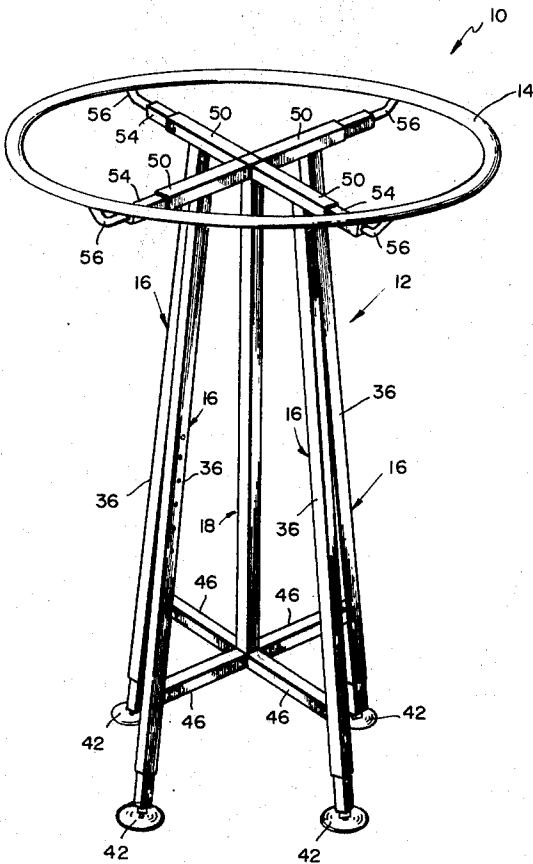
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[57] ABSTRACT

A rack for displaying articles thereon wherein a plurality of leg units are removably interconnected and an annular ring is removably mounted on adjustable arms of said leg units at the upper ends thereof, the adjustable arms providing for mounting of different diameter rings thereon, and the entire rack being easily assembled for displaying said articles or disassembled for packaging and shipping in a knocked-down position.

8 Claims, 8 Drawing Figures



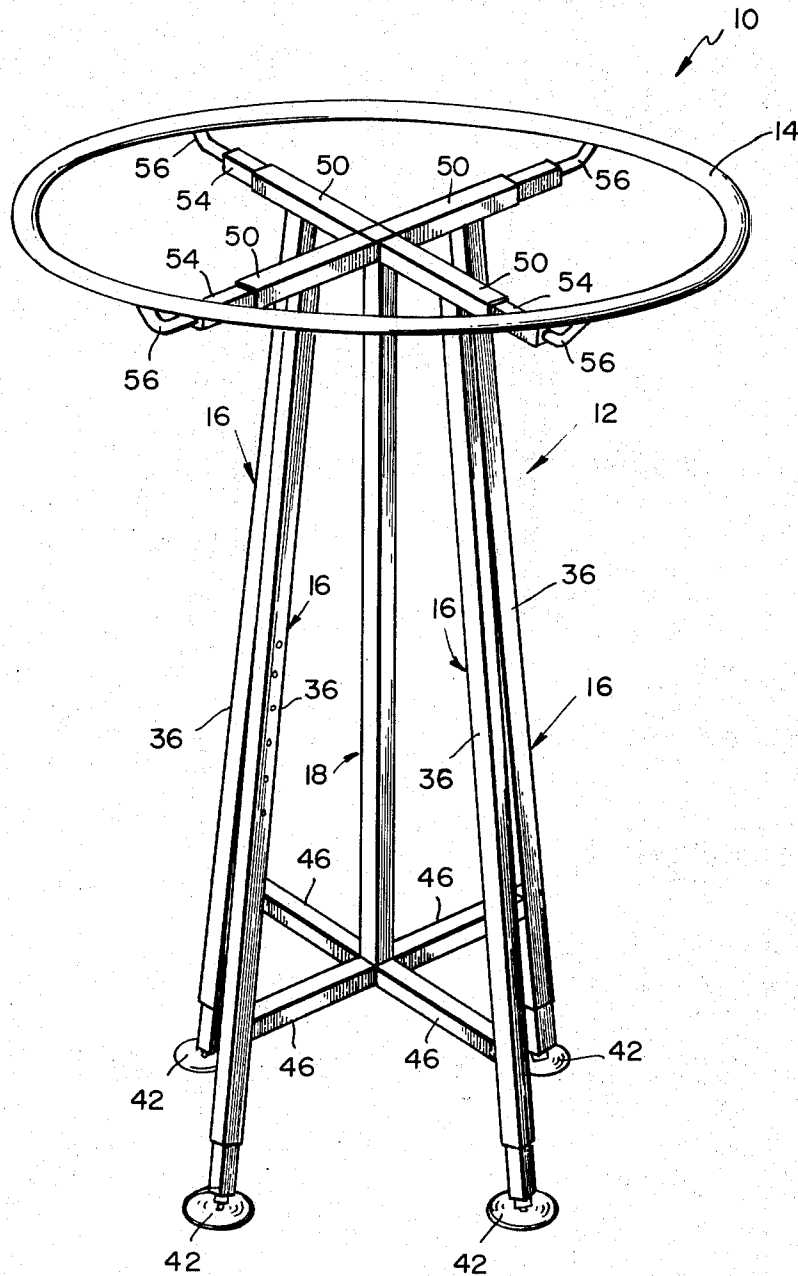
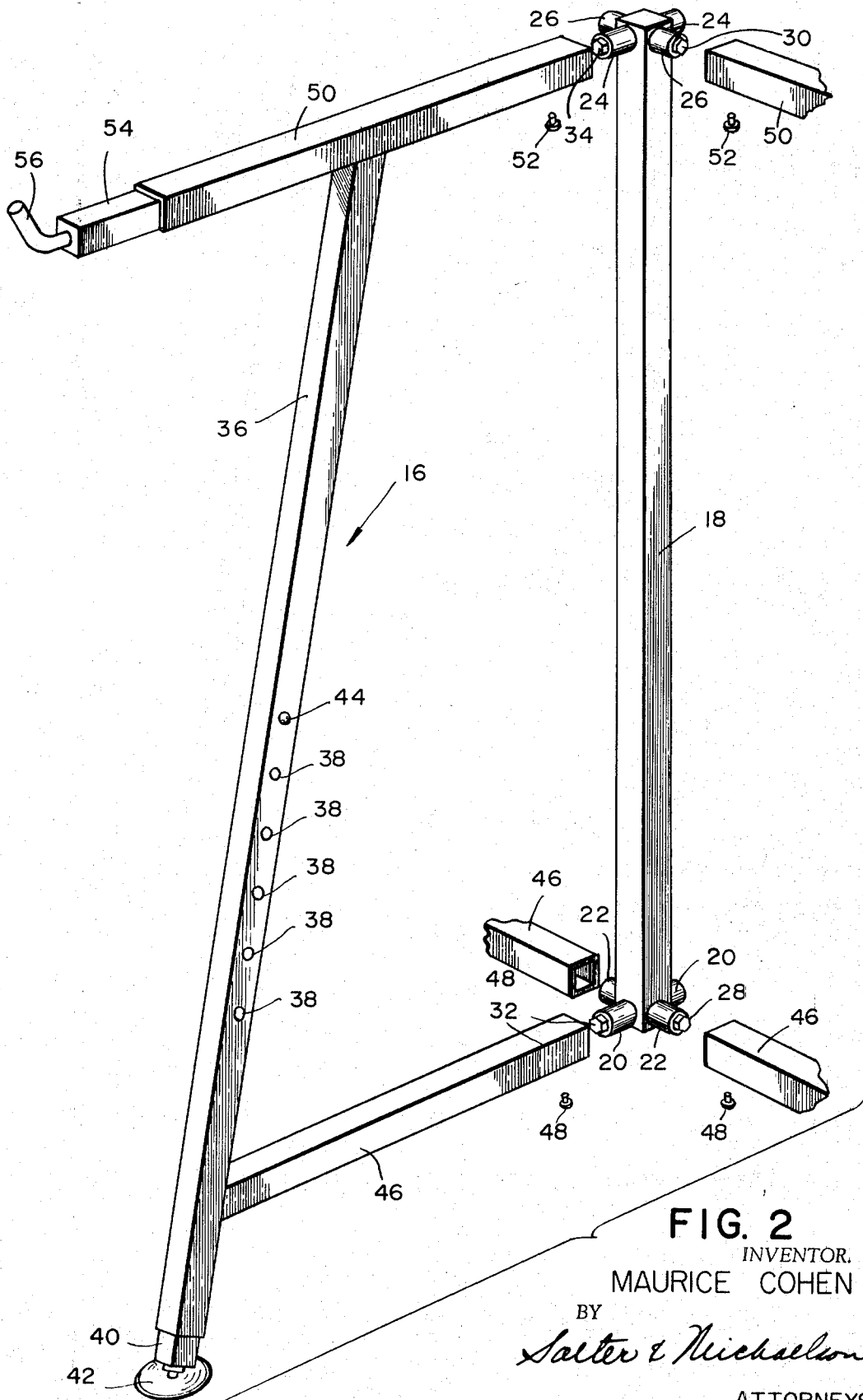


FIG. 1

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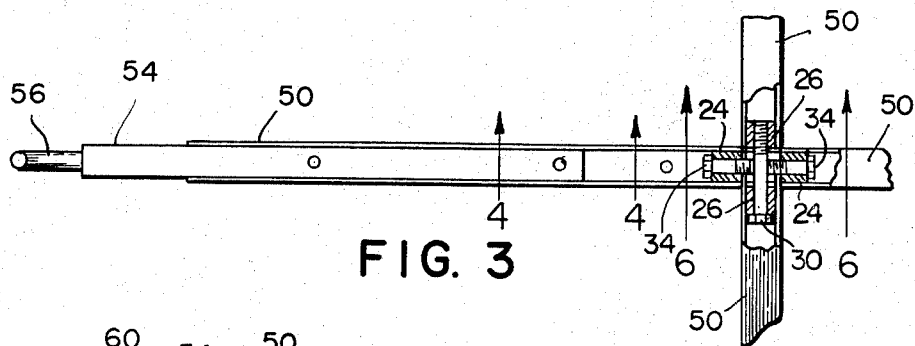


FIG. 3

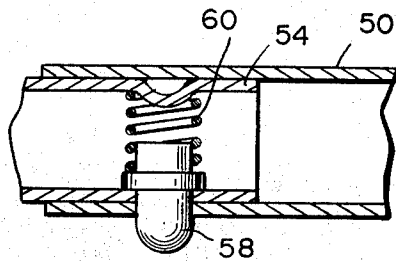


FIG. 4

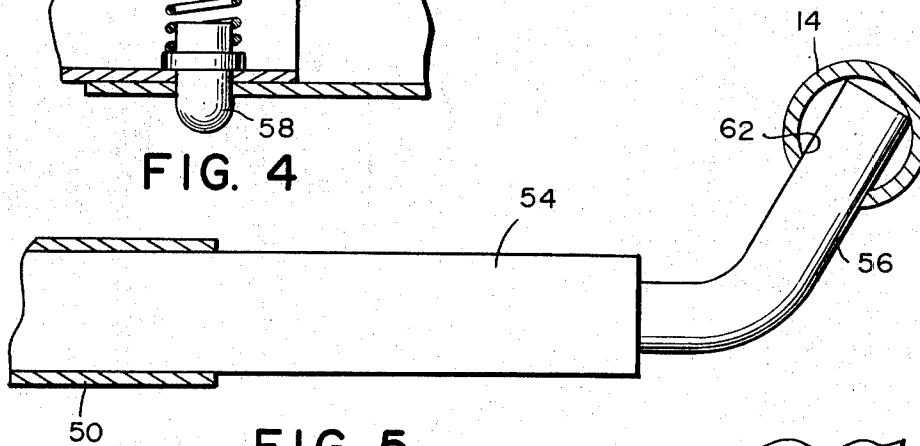


FIG. 5

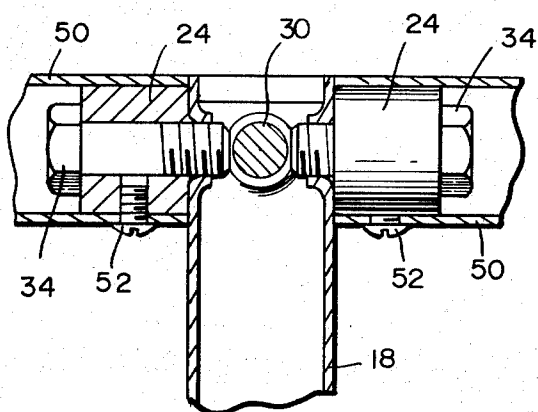


FIG. 6

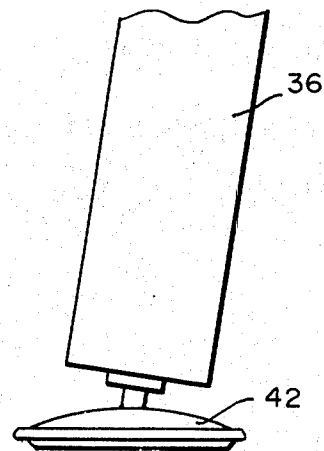
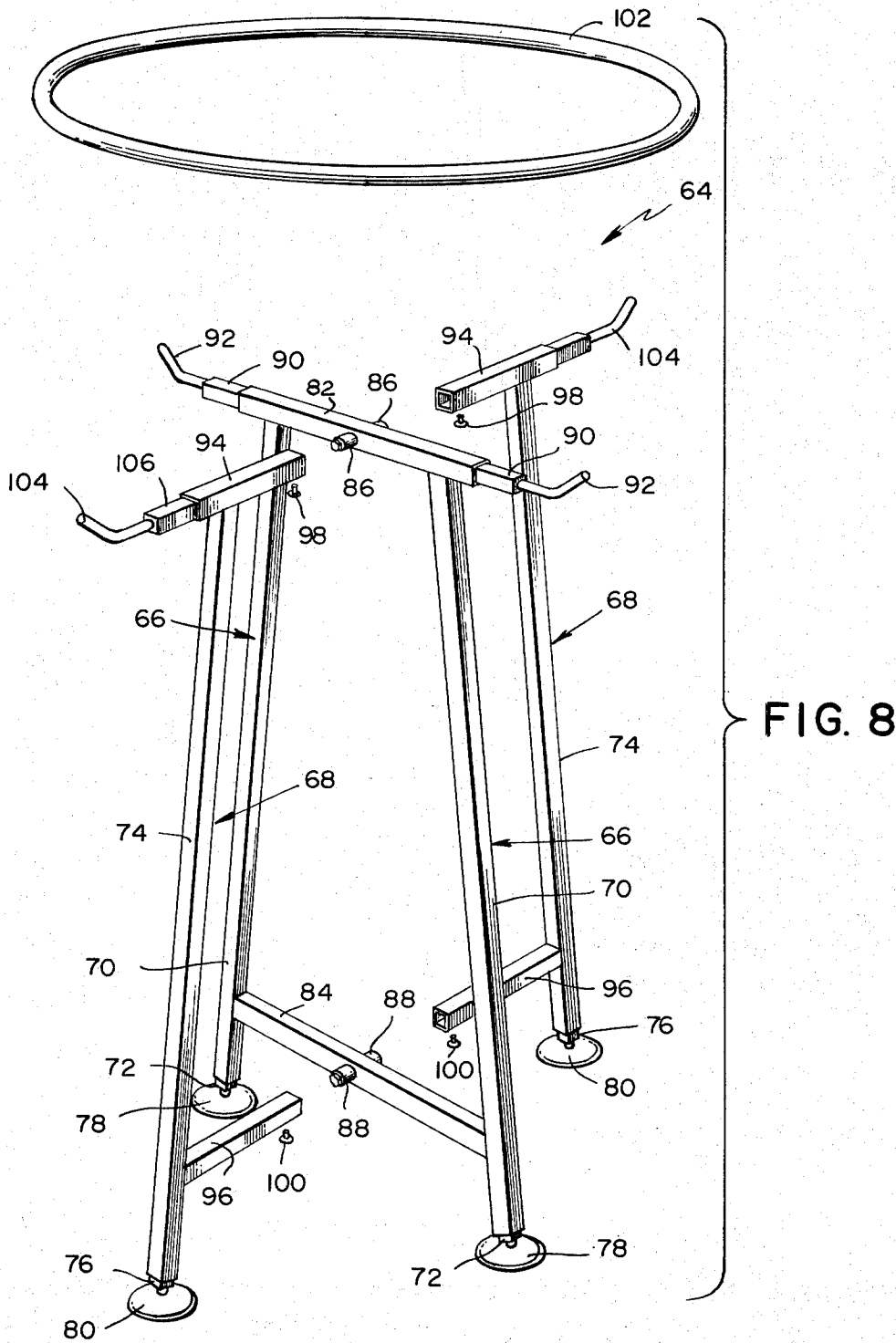


FIG. 7

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DISPLAY RACK WITH ANNULAR MOUNTING RING

This application is a continuation of Ser. No. 633,045 filed Apr. 29, 1967 and now abandoned.

BACKGROUND OF THE INVENTION

Although the display rack of the present invention has general application, it has application in displaying articles of clothing that are adapted to be mounted on hangers, such as in the display of dresses, blouses, jackets, suits, etc. One form of such a display rack that has been employed heretofore has incorporated an annular ring at the upper end thereof so that the garments are substantially located in a circle in the display position thereof. Such display racks have the advantage of displaying a great number of garments in a limited area and further have been found to be particularly attractive in that they complement modern surroundings. Further, such display racks are useful as island units in the retail establishment.

In prior known display racks that incorporated an annular ring at the upper end thereof, the ring was usually engaged in some manner for securement to a base, and in one form of the prior known device, the ring was fixed to angular pins that were attached to arms, which in turn were rigidly welded to a central hub member. In securing the ring to the annular pins, pressure was necessarily exerted radially against the ring until the ring was welded in place to the pins, thus insuring a joint that was free of slack between the annular pins and ring. This type of construction was somewhat complicated and necessarily increased the cost of the rack.

In another version of the rack of the prior art, generally upright members were interconnected to each other to define a cross bar construction at the upper end thereof, each of the members of the cross bar construction having a pin secured thereto to which an annular ring was welded. Here again, it was necessary to exert some pressure against the ring at the junction of the angular pin and ring in order to insure a tight joint. This also prohibitively increased the cost of the rack, and because of the rigid interconnection of the cross members, the rack could not be disassembled and this resulted in a bulky unit for packaging and shipping.

SUMMARY OF THE INVENTION

The display rack of the present invention includes a base assembly on which an annular ring is removably mounted. The base assembly is comprised of a central post, to which a plurality of substantially upright leg units are removably interconnected, the upright leg units, post and ring being constructed so as to be easily disassembled for shipping in a knock-down position. Joined to the central post at the upper and lower ends thereof are a plurality of stub shafts that are adapted to be received in upper and lower arms of each of the leg units. The leg units in turn are provided with a telescoping member in the upper arm thereof to which a hook element is secured. Thus, the hook element of each leg unit is radially adjustable to provide for assembly of the annular ring thereon and to further provide for use of annular rings of various diameters with the base assembly. Because of the unique structural arrangement of the stub shafts on the central post, the leg units may be quickly and easily assembled or disassembled with respect to the central post, and the entire base as-

sembly may be disassembled for shipping in a knocked-down position if required.

Accordingly, it is an object of the present invention to provide a display rack wherein the component parts of the rack are adapted to be assembled or disassembled in a relatively easy manner and without the requirement of special tooling.

Another object of the invention is to provide a display rack for use in the display of garments that includes a base assembly on which an annular ring is removably mounted, the base assembly including a plurality of leg units and a central post, the leg units being removably interconnected to the central post in the assembly of the rack.

Still another object is to provide a garment rack including an annular ring that is mounted on a base assembly by the means of hook elements that extend through openings formed in the ring, the hook elements being radially adjustable to locate the ring in position and to provide for the use of different diameter rings.

Still another object is to provide a knock-down garment display rack that includes a central post to which a plurality of stub shafts are joined, leg units having arms joined thereto being received on the stub shafts when the rack is disposed in the assembled position.

Other objects, features and advantages of the invention will become apparent as the description thereof proceeds when considered in connection with the accompanying illustrative drawings.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the display rack embodied in the present invention;

FIG. 2 is a perspective view of the central post of the base assembly and a leg unit that is adapted to be mounted on the central post;

FIG. 3 is a fragmentary top plan view with portions shown in section of the display rack and particularly showing the interconnection of the leg units to the central post;

FIG. 4 is a sectional view taken along lines 4—4 in FIG. 3;

FIG. 5 is a view in elevation with portions shown in section of the end of an arm of a leg unit illustrating a hook element joined thereto as it is received in the annular ring of the display rack;

FIG. 6 is a sectional view taken along lines 6—6 in FIG. 3;

FIG. 7 is a fragmentary elevational view of the lower end of a leg unit showing the adjustable glide mounted therein; and

FIG. 8 is a perspective view of a modified form of the invention.

DESCRIPTION OF THE INVENTION

Referring to the drawings and particularly to FIG. 1, the display rack embodied in the present invention is generally indicated at 10 and includes a leg assembly generally indicated at 12 and an annular ring 14 that is adapted to be removably mounted on the leg assembly 12 as will hereinafter be described. The leg assembly 12 is comprised of a plurality of leg units, each of which is generally indicated at 16, and a central post indicated at 18.

Referring now to FIG. 2, the central post 18 is shown as being an elongated member of tubular formation and having a substantially square cross-sectional configuration. Fixed to the lower end of the post 18 are opposed stub shafts 20 that are located on opposite sides of the post 18, and stub shafts 22 that are similarly fixed to opposed sides of the post 18. Mounted on the upper end of the post 18 are similar sets of stub shafts 24 and 26, the manner of securing the sets of stub shafts 20, 22 and 24, 26 to the shaft 18 to be described below.

The lower and upper stub shafts 22 and 26, as seen in FIG. 2, are generally cylindrical in configuration and are each provided with a central opening through which elongated bolts 28 and 30, respectively, extend. The stub shafts 22 have threaded openings formed axially therein for receiving the shank of the bolt 28. Thus, when the bolt 28 is inserted through the adjacent stub shaft 22 and into the threaded oppositely located stub shaft 22 and tightened in position, the opposed stub shafts 22 will be drawn into firm engagement with the adjacent side of the post 18. The stub shafts 26 are fixed to the upper end of the post 18 in a similar manner by the bolt 30.

Each of the stub shafts 20 and 24 are secured to the post 18 by individual bolts indicated at 32 and 34, respectively, the individual bolts 32 and 34 for the stub shafts 20 and 24 being necessary since the bolts 28 and 30 extend completely through the tubular post 18. As shown in FIGS. 3 and 6 the bolts 32 and 34 are fixed in the post 18 by threadably engaging the adjacent wall thereof, thereby locking the stub shafts 20 and 24 to the surfaces of the post 18 with which they make contact.

Referring now to FIG. 2, one of the leg units 16 is shown removed from the central post 18 and, as illustrated, includes a substantially upright leg member 36 that is tubular in construction and that is formed with a plurality of adjustment openings 38 located in spaced relation in a face thereof. Telescopically and slidably received in the tubular leg member 36 is an inner member 40, at the lowermost end of which a glide 42 is secured. The inner member 40 is axially adjustable with respect to the leg member 36, and for this purpose, is provided with a spring urged plunger indicated at 44 in FIG. 2 that is adapted to be received in any one of the openings 38 depending upon the required position of the leg member 40. Thus, it is seen that the height of the rack 10 may be adjusted by locating the inner leg member 40 of each leg unit 16 in the required adjusted position with respect to the leg member 36. Fixed to the leg member 36 of each leg unit 16 adjacent to the lower end thereof is a lower arm member 46 that is also tubular in construction, and, as shown, has a relatively square cross-sectional configuration. The inside dimensions of the tubular lower arm member 46 are proportioned for being slidably and frictionally received on the stub shaft of the central post 18 that faces in the direction thereof. Thus, in assembling each leg unit 16 to the central post 18, the lower arm member 46 thereof is inserted over the adjacent stub shaft in frictional relation until the outermost edges of the arm member 46 engage the adjacent wall of the post 18. The arm member 46 is then secured in position with respect to the post 18 by a screw 48 that is inserted through an opening in the lower arm member 46 and

One of the features of the invention is the mounting of the ring 14 on the base assembly 12 without the requirement of permanently securing the ring 14 to the base assembly 12. In order to accomplish this purpose, each of the upper arms 50 of the leg units 16 has an inner arm 54 telescopically received therein, a hook element 56 being secured to the outermost end of each inner arm 54. The hook elements 56 project upwardly in an inclined direction, which inclination provides for easy insertion of the hook elements 56 in appropriate openings 62 formed in the ring 14. As shown in FIG. 5, the axis of the opening 62 is inclined to the vertical, thereby providing for the easy insertion of the hook element 56 into the opening 62. Since the diameter of the annular ring 14 is fixed, it is necessary that the hook elements 56 be somewhat radially adjustable so as to provide for slight inconsistencies in the location of the arms 50 when it is necessary to insert the hook elements 56 into the openings 62 formed in the ring 14. Further, it is sometimes desirable to provide different diameter rings 14 so as to increase the flexibility of use of the unit. In this connection, it is seen that a larger diameter ring would be able to accommodate more garments thereon.

Radial adjustment of the inner arm 54 and the hook element 56 secured thereto in each of the upper arms 50 is provided by dimensioning the inner arm 54 so that it is telescopically and slidably received within the upper arm 50. Openings similar to openings 38 are also formed in the underside of the arms 50 of each leg unit 16, and, as shown in FIG. 4, a spring urged plunger 58 is disposed in each of the inner arms 54 and is received in an appropriate opening 62 depending upon the required location of the hook elements 56. It is seen that the plunger 58 may be urged inwardly against the action of a spring 60 with which it engages so as to be normally retained within the confines of the walls of the inner arm 54 when the plunger 58 is not disposed opposite an adjustment opening. As the inner arm 54 is moved within the upper arm 50 to the required adjusted position, the spring urged plunger 58 will snap into the required opening for locking the inner arm 54 with respect to the upper arm 50. Each of the inner arms 54 is adjusted with respect to its arm 50 to the required position for properly locating the hook elements 56 in the position for being received in the openings 62 formed in the ring 14. As shown in FIG. 5,

As shown in FIG. 6, the upper arm members 50 of the leg units 16 are secured to the stub shafts 24 and 26 by screws 52 that extend through openings formed therein and are received in threaded openings in the stub shafts 24 and 26. It is seen that the leg units 16 may be easily assembled with the post 18 or disassembled therefrom as required by the simple expedient of fixing the lower arm member 46 and 50 to the stub shafts 20, 22 and 24, 26 respectively.

One of the features of the invention is the mounting of the ring 14 on the base assembly 12 without the requirement of permanently securing the ring 14 to the base assembly 12. In order to accomplish this purpose, each of the upper arms 50 of the leg units 16 has an inner arm 54 telescopically received therein, a hook element 56 being secured to the outermost end of each inner arm 54. The hook elements 56 project upwardly in an inclined direction, which inclination provides for easy insertion of the hook elements 56 in appropriate openings 62 formed in the ring 14. As shown in FIG. 5, the axis of the opening 62 is inclined to the vertical, thereby providing for the easy insertion of the hook element 56 into the opening 62. Since the diameter of the annular ring 14 is fixed, it is necessary that the hook elements 56 be somewhat radially adjustable so as to provide for slight inconsistencies in the location of the arms 50 when it is necessary to insert the hook elements 56 into the openings 62 formed in the ring 14. Further, it is sometimes desirable to provide different diameter rings 14 so as to increase the flexibility of use of the unit. In this connection, it is seen that a larger diameter ring would be able to accommodate more garments thereon.

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a hook element 56 is shown extending through an opening 62 formed in the ring 14. As previously described, the position of each hook element 56 is radially adjustable so as to enable the ends of the hook elements 56 to be received within the appropriate openings in different diameter rings.

Prior to the assembly of the display rack 10, the central post 18 and the leg units 16 are normally located in a knocked-down position, which enables the rack to be shipped or stored in a compact package. When it is required to assemble the rack, the leg units 16, post 18 and ring 14 are removed from the package and with only the use of a screw driver are interconnected together. In this connection, each of the leg units is joined to the central post 16 by inserting the lower arms 46 on the adjacent stub shafts 20 and 22 and the upper arms 50 on the adjacent stub shafts 24 and 26. The lower and upper arms are secured to the stub shafts by the insertion of the screws 48 and 52 through the appropriate openings formed in the arms and into the threaded opening formed in the stub shafts. With the inner members 54 adjusted to proper location, the ring 14 is mounted in place by inserting the ends of the hook elements into the openings 62. The rack as assembled is then ready for use. Disassembly of the rack may be simply accomplished by removing the screws 48 and 52 from the arms and stub shafts after removal of the ring 14 from the hook elements 56. After the arms 46 and 50 have been extracted from the stub shafts, the component parts may be packaged in a compact unit for shipping or storing.

Referring now to FIG. 8, a modified form of the invention is illustrated and includes a rack generally indicated at 64 wherein the center post is eliminated. The rack 64 also includes a plurality of leg units which are generally indicated in pairs at 66 and 68. Both of the leg units 66 include a generally upright leg member 70 in the bottom end of which an inner leg member 72 is slidably and adjustably received. The leg units 68 include similar leg members 74 in which inner leg members 76 are slidably and adjustably received. Glides 78 and 80 are fixed to the bottom end of the inner leg members 72 and 76 respectively. The leg units 66 further include common tubular upper and lower arms 82 and 84 that are fixed to the leg members 70 at the intermediate and upper ends thereof. Located at approximately the midpoint of the common upper and lower arms 82 and 84 are oppositely directed pairs of stub shafts 86 and 88, while adjustably and slidably received in the common upper arm 82 for the leg units 70 are inner arms 90 on the ends of which hooks 92 are secured.

Fixed to the leg members 74 of the leg units 68 are tubular upper and lower arms 94 and 96, the inner ends of which are receivable on the oppositely directed pairs of stub shafts 86 and 88 respectively. Set screws 98 and 100 extend into the arms 94 and 96 for locking them to the stub shafts 86 and 88 respectively. The assembly is completed by mounting a ring 102 formed with appropriate holes therein on the hooks 92 and on hooks 104 that are fixed to inner arms 106 that are, in turn, slidably and adjustably received in the upper arms 94. As previously described above in connection with the inner arms 54, the inner arms 90 and 106 are radially adjustable to provide for removably mounting the ring

102 on the hooks 92 and 104 and for mounting different diameter rings on the assembly.

It is seen that the rack 64 is easily assembled, it only being necessary to fit the arms 94 on the stub shafts, apply the set screws and then mount the ring 102 on the hooks.

While there is shown and described herein certain specific structure embodying the invention, it will be manifest to those skilled in the art that various modifications and rearrangements of the parts may be made without departing from the spirit and scope of the underlying inventive concept and that the same is not limited to the particular forms herein shown and described except insofar as indicated by the scope of the appended claims.

What is claimed is:

1. In a display rack, a plurality of substantially upright leg units, means for interconnecting said leg units including a center post having a plurality of stub shafts joined to the upper and lower ends thereof, said leg units having arms located at the uppermost and adjacent the lowermost ends thereof, said stub shafts being receivable in the arms formed as part of said leg units at the uppermost end and in the arms located at the lower end thereof, an adjustable hook element located on each of said arms, an annular ring removably mounted on said hook elements, said hook elements being adjustable radially to compensate for the diameter of said annular ring, said leg units with the arms joined thereto being disconnectable and said ring being removably mounted on said hook elements, whereby said leg units including said arms and said ring are located in a knocked-down position when the display rack is packaged for shipping or storing, and means for removably securing said arms to said stub shafts to provide for setting up said leg units in the substantially upright position and thereafter for mounting said ring on said hook elements.

2. In a display rack, a plurality of substantially upright leg units, means for interconnecting said leg units including a center post having a plurality of stub shafts fixed to the upper end thereof, said leg units having an arm located at the uppermost end thereof, each of said stub shafts extending into the inner end of an arm for interconnecting said leg units to said center post at the upper end thereof, an adjustable hook element located on each of said arms, and an annular ring removably mounted on said hook elements, said hook elements being adjustable radially to compensate for the diameter of said annular ring.

3. In a display rack as set forth in claim 2, a plurality of stub shafts joined to the lower end of said post, and an arm joined to each of said leg units at the lower end thereof and fixed to a stub shaft for anchoring the lower ends of said leg units to said post.

4. In a display rack as set forth in claim 3, a fastening element extending through each of said stub shafts for securement of said stub shafts to said vertical post, said stub shafts being frictionally received in said upper and lower arms, and a fastening member extending through each of said arms and into the stub shaft received therein for securely mounting each arm on a stub shaft.

5. In a display rack as set forth in claim 2, each of said arms including an outer member and an inner member telescopically received in said outer member,

said outer members being removably fixed to said upper shafts on said center post and each of said inner members having a hook element joined to the outer end thereof, and means for positively adjusting said inner members with respect to said outer members to locate the hook elements thereon in the holes in said ring, thereby providing for mounting of different diameter rings on said hook elements.

6. In a display rack as set forth in claim 5, said adjusting means including a plurality of openings located in spaced relation in said outer arm members and a spring urged plunger projecting through an opening in each of said inner arm members and being selectively registrable with an opening in an outer arm member to interlock said inner arm members in the desired position.

7. A display rack, comprising a plurality of substantially upright leg units, each of which has an arm located at the uppermost end thereof, each of said arms including an outer member having a square cross-sectional configuration and an inner member of similar cross section telescopically received in said outer member, two of said units having a common arm to which oppositely directed cylindrically formed stub shafts are fixed intermediate the ends thereof, the outer

member of each arm of the other of said leg units being receivable on a stub shaft, the dimension of said square-shaped outer arm members providing for frictional engagement of the stub shafts within said outer members, wherein said leg units are disposed in a unitary assembly, a hook element fixed to the inner member of each arm and extending outwardly and upwardly in an inclined direction with respect thereto, and an annular ring having a plurality of holes formed therein for receiving said hook elements so as to securely mount said ring on said hook elements, the axis of each hole in said ring being inclined to the vertical, thereby providing for easy insertion of said hook elements in said holes, and means for radially adjusting said inner members with respect to said outer members to locate the hook elements thereon in the holes in said ring, thereby providing for mounting of different diameter rings on said hook elements.

8. A display rack as set forth in claim 7, a bolt extending through said oppositely directed stub shafts and through the common arm on which said stub shafts are mounted for fixing said stub shafts on said common arm.

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