April 4, 1967 E. F. STEINMETZ 3,312,355

GARMENT RACK AND METHOD OF ASSEMBLING SAME

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Fig. 1

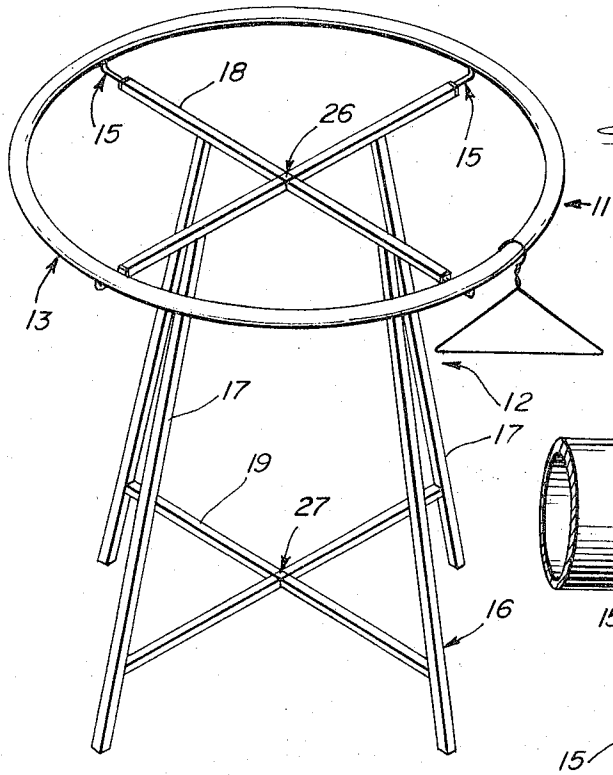


Fig. 9

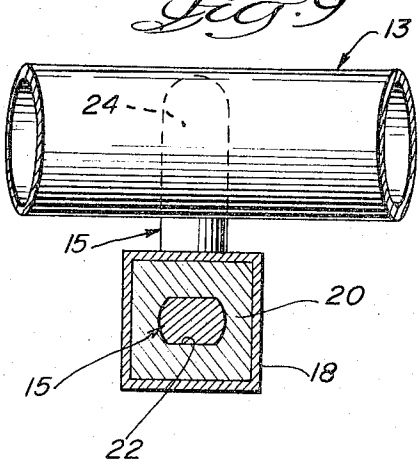


Fig. 2

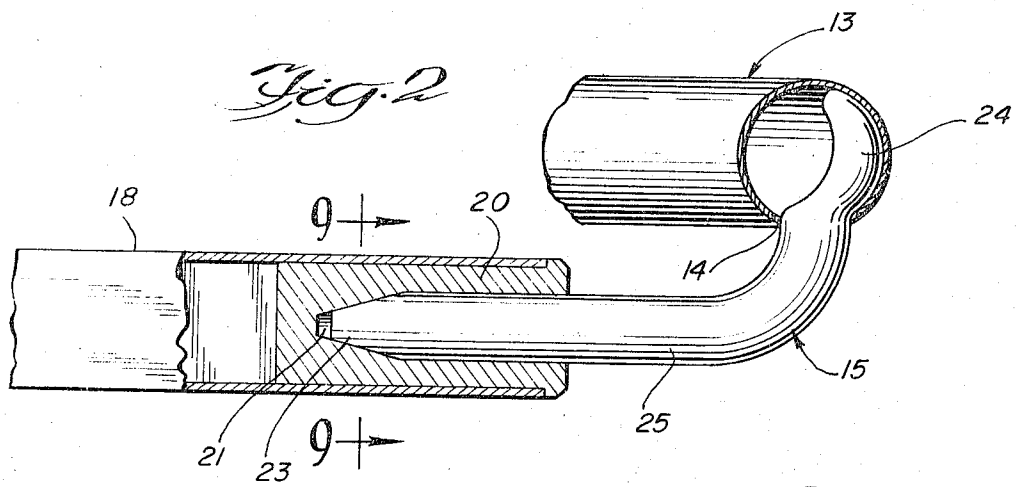


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Fig. 3

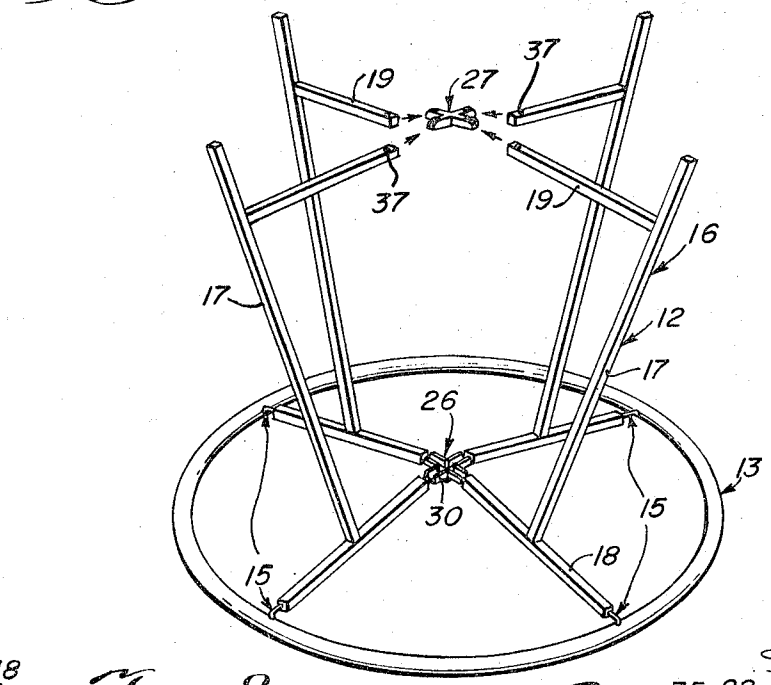



Fig. 8

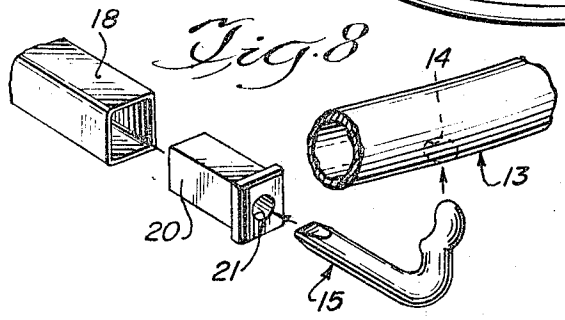



Fig. 5

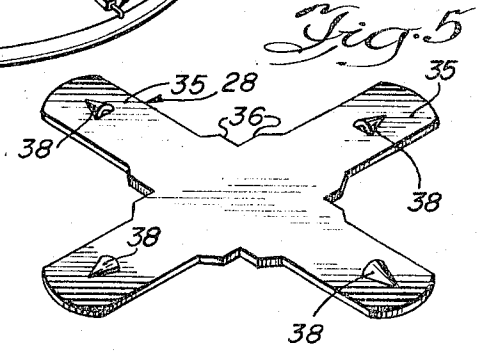
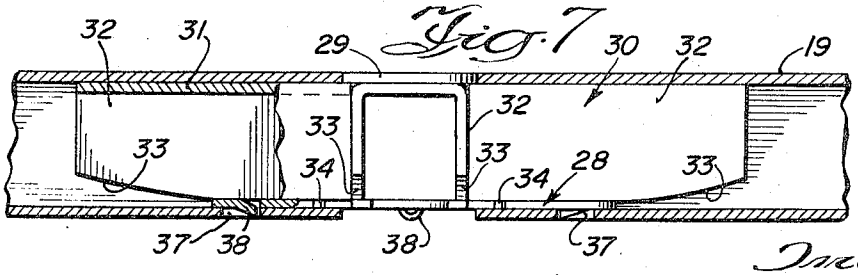



Fig. 7

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GARMENT RACK AND METHOD OF ASSEMBLING SAME

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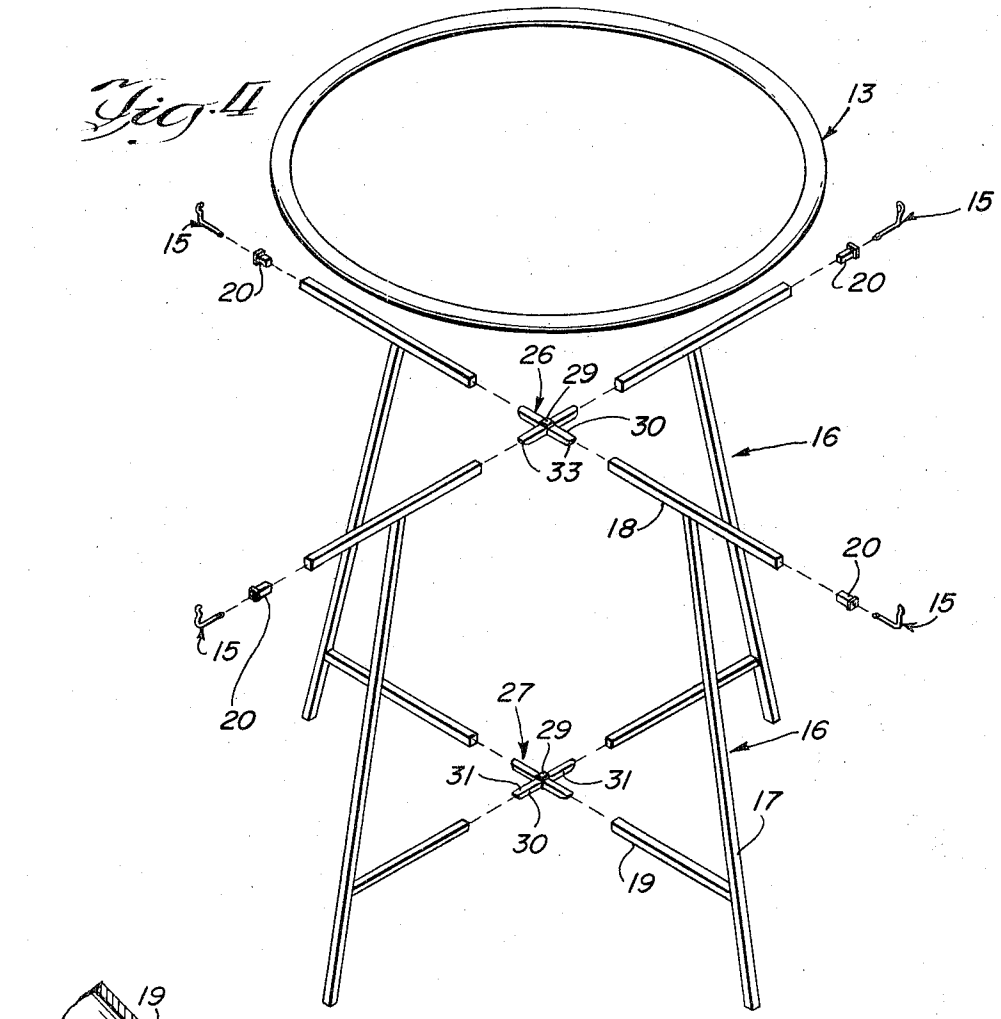
Fig. 4



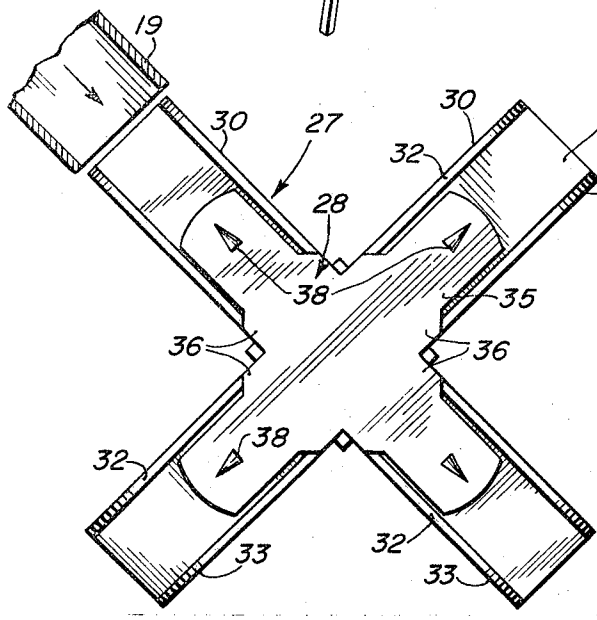




Fig. 6

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United States Patent Office

3,312,355

Patented Apr. 4, 1967



# 3,312,355
# GARMENT RACK AND METHOD OF ASSEMBLING SAME

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Filed May 21, 1965, Ser. No. 457,780
13 Claims. (Cl. 211—177)

This invention relates to a garment rack that may be assembled from standard stock parts without the use of any tools or bolts, and to the method of assembly.

Although the support is described with particular reference to a garment display rack, it may be used in connection with tables, pedestals, or any similar structure adapted to be supported by three or more legs. Furthermore, while the garment display rack shown in the drawings is circular, it may take various other shapes.

Each part of the support structure, and the hang rod supported thereby, is substantially flat in its disassembled condition, and the entire structure may be shipped or stored in said condition in packages with a minimum of unused space. When the unit is assembled, it forms a rigid structure in which all parts are held firmly against accidental separation, but the entire unit may be disassembled quickly and easily, when desired, without the use of tools.

Suitable structure by means of which the above mentioned and other advantages of the invention are attained will be described in the following specification, taken in conjunction with the accompanying drawings illustrating a preferred exemplary embodiment of the invention, in which:

FIGURE 1 is a perspective view of a garment display rack embodying the invention;

FIGURE 2 is a fragmentary cross-sectional view, showing how the hang rod is secured to the support structure;

FIGURE 3 is an inverted perspective view, illustrating the method of assembling the garment display rack;

FIGURE 4 is an exploded perspective view, showing all the parts of the garment display rack in the relative positions they occupy in the assembled unit;

FIGURE 5 is a detail perspective view of a spring latch member;

FIGURE 6 is a bottom elevational view of a centerpiece, showing the spring latch member and a fragmentary portion of a brace adapted to engage one finger of the centerpiece;

FIGURE 7 is a fragmentary longitudinal sectional view showing the centerpiece engaged with two braces;

FIGURE 8 is an exploded perspective view, showing the means for securing a brace to the hang rod; and

FIGURE 9 is a cross-sectional view, taken along the line 9—9 of FIGURE 2.

In the drawings, a garment display rack 11 comprises a support 12 and a hang rod 13. The hang rod, upon which garment hangers carrying merchandise to be displayed are slidably supported, is preferably made of tubular stock having a circular cross-sectional configuration. It may, of course, take other cross-sectional configurations and may be solid, if desired. The hang rod may be of any desired shape, but the circular shape shown in the drawings is preferred because the merchandise supported on any portion of the hang rod may be readily moved into position for close inspection by a prospective customer standing by the display rack.

The hang rod is provided with a plurality of apertures 14 for engagement with lugs 15 projecting outwardly from support 12. Lugs 15 are so shaped as to space the hang rod from the support members to prevent interference with the sliding movement of the garment hangers anywhere around the perimeter of the hang rod. Preferably, the hang rod is held in a plane above the upper surface of support 12. The top of support 12 provides a suitable support surface for a flat plate which may serve many different purposes, such as, for example, a table top. Support 12 is formed of a plurality of separate support members 16, each comprising a leg 17, an upper tubular brace 18 and a lower tubular brace 19. Brace 18 extends transversely of leg 17 and the upper end of leg 17 is permanently secured to an intermediate portion of brace 18. The upper end of leg 17 is spaced inwardly from the outer end of brace 18 a distance sufficient to provide clearance for garments carried by hangers slidably mounted on the hang rod to permit the garments to be moved along the hang rod without interference from legs 17. If the hang rod is circular, or any similar shape without sharp corners, the garments may be moved along the rack through 360°. One end of brace 19 is permanently secured to leg 17 in longitudinally spaced relationship to brace 18. Braces 18 and 19 are parallel to each other so that each support member will be coplanar in its knockdown condition, so as to conserve shipping and storage space for the garment display rack in its knockdown condition. Lug 15 may be integral with upper brace 18, but preferably is secured thereto by a plug 20 press fitted into the outer end of the brace. Plug 20 is provided with a longitudinally extending recess 21 in its outer end. Recess 21 is generally of circular cross-sectional configuration, but its inner end is preferably flattened, as indicated at 22, FIGURE 9, to fit the flattened end 23 of lug 15, to prevent the lug from turning in plug 20.

The other end 24 of lug 15 is offset from the stem 25 of the lug and is shaped to conform to the shape of the interior of tubular hang rod 13. Apertures 14 may be located on the inner side of the circular hang rod, but preferably are located on the bottom of the hang rod so that the horizontal plane of the hang rod is above the uppermost horizontal plane of support 12 when the garment display rack is assembled. Although stem 25 is curved upwardly, as shown in FIGURE 2, to enable end 24 of lug 15 to fit in aperture 14 and support hang rod 13 in a horizontal plane above the top surfaces of braces 18, it lies in a common vertical plane with leg 17 and braces 18 and 19 so that support member 16 can be packed with a minimum of unused space, even if lug 15 is integral with brace 18.

Separate support members 16 are interengaged with an upper centerpiece 26 and a lower centerpiece 27 to hold them in supporting engagement with hang rod 13. Centerpiece 26 maintains the inner ends of braces 18 engaged therewith in a horizontal plane slightly lower than the horizontal plane of hang rod 13. The centerpieces are duplicates, except for latch means 28 secured to centerpiece 27 to prevent accidental separation of the support members when they are interengaged. The detailed description will be specific to centerpiece 27, and identical structure on centerpiece 26 will be indicated by the same reference numerals to avoid duplication of the description.

Each centerpiece comprises a centrally disposed hub 29 and channel shaped fingers 30 extending radially from the hub. Each finger 30 comprises a top wall 31 and depending sidewalls 32. The fingers are dimensioned to fit snugly within tubular braces 18 and 19, and the lower edges of sidewalls 32 are tapered arcuately at their outer end, as indicated at 33, to permit telescoping movement of the fingers within the tubular braces as the centerpieces are moved into interengagement with the braces. The angular relationship of the fingers conforms to the angular relationship of apertures 14 to the vertical axis of hang rod 13. The conformity of the angular relationship between the fingers, and the spacing of apertures 14, enable the fingers to be longitudinally aligned with the

tubular braces, thus insuring a proper fit between each centerpiece and the braces when the support is assembled.

Latch means 28 comprises a flat spring clip secured to the underside of centerpiece 27 in any suitable manner as, for example, by means of rivets 34. The spring clip has radially extending fingers 35 provided with shoulders 36 engaging the lower edges of sidewalls 32 of fingers 30. The outer end of each spring finger is narrower than the distance between sidewalls 32 so that it can be pressed inwardly between said sidewalls. Spring fingers 35 are shorter than fingers 30 and do not extend beyond the arcuately curved portions of sidewalls 32. The height of the sidewalls 32 is slightly less than the corresponding dimension of tubular brace 19 to allow room for spring fingers 35 to fit with fingers 30 within tubular braces 19. The resilience of the spring fingers urges them outwardly relative to fingers 30, so that each spring finger is pressed inwardly by the tubular brace as centerpiece 27 and tubular brace 19 are moved into interengagement. Each tubular brace has an aperture 37 in its bottom wall, and each spring finger has a detent 38 struck therefrom in position to engage aperture 37 and latch the support members against accidental separation.

The garment display rack is assembled in inverted position. Hang rod 13 is placed on the floor, or a similar horizontal surface, with apertures 14 facing upwardly. Support members 12 are positioned by inserting end 24 of a lug 15 in each aperture 14. The offset shape of end 24 and the clearance between apertures 14 and lug 15 cause each support member to be loosely held in inclined position, relative to the floor. Braces 18 are arranged radially of the hang rod with the inner end of each brace 18 higher than the outer end which is pivotally secured to the hang rod.

The support members are moved pivotally downwardly as centerpiece 26 is held approximately parallel to the plane of hang rod 13 with its hub 29 substantially on the vertical axis of the hang rod, and with each finger 30 aligned longitudinally with a tubular brace 18. The support members are moved pivotally downwardly until each finger 30 has its outer end projecting into the inner end of one of the tubular braces 18. The arcuate curvature of sidewalls 32 facilitates the initial entry of fingers 30 into the tubular braces. The support members are then moved pivotally downwardly, and centerpiece 26 is moved vertically downwardly, until the inner ends of tubular braces 19 are spaced apart a distance only slightly more than the overall width of centerpiece 27. Centerpiece 27 is then positioned between the inner ends of tubular braces 19 with spring clip 28 uppermost, and is held in place until each finger is partially entered into a tubular brace.

When each finger 30 of centerpiece 27 is partially entered into a tubular brace 19, the support members are moved pivotally downwardly until braces 18 and 19 are in horizontal planes. As the braces reach their ultimate horizontal position, spring pressed detents 38 snap into apertures 37. The interengagement of detents 38 and apertures 37 interlocks the support members and the hang rod into a rigid unitary structure and prevents accidental separation of the support members from the hang rod and from each other. The garment display rack is then inverted, and is held firmly in position to support a multiplicity of loaded garment hangers so that each hanger may be slid around the entire circle of the hang rod without interference from any of the lugs that project outwardly from braces 18 to support the hang rod in a horizontal plane above said braces.

The garment display rack is preferably inverted again to disassemble it. When the rack is upside down, each detent 38 is pressed downwardly, and the related support member is moved pivotally outwardly to disengage the support members from both centerpieces. After such disengagement, each support member may be disengaged from the hang rod and packed in flat condition.

Although a preferred embodiment of the invention has been described in considerable detail, it will be understood that the description thereof is intended to be illustrative, rather than restrictive, as many details of construction may be modified or changed without departing from the spirit or scope of the invention. For example, the hang rod could be positioned below the plane of the braces 18 and the lugs 15 could be suitably designed to interconnect the hang rod and support assembly. With this arrangement, the braces 18 could serve as a support for a table top extending outwardly beyond the hang rod.

It is, of course, intended to cover by the appended claims all such modifications as fall within the true spirit and scope of the invention.

What is claimed is:

1. A garment rack comprising a hang rod for slidably supporting a plurality of garment hangers, a plurality of separate support members for securing said hang rod in an elevated position, means detachably securing the hang rod to the support members, and a latch member engageable with all of said support members for mechanically interlocking them and said hang rod to form a rigid structure.

2. A garment rack comprising a circular hang rod for slidably supporting a plurality of garment hangers carrying garments to be displayed, a plurality of separate support members detachably secured to said hang rod, each of said support members comprising a vertical portion and a horizontal portion secured together, said horizontal portions being disposed radially relative to said hang rod, and means for mechanically interlocking said support members into cooperative relationship with said hang rod to form a rigid structure in which said hang rod is supported in elevated position relative to the surface on which the rack rests.

3. A garment rack comprising a circular hang rod for slidably supporting a plurality of garment hangers carrying garments to be displayed, a plurality of separate support members, each of said support members comprising a leg, an upper brace and a lower brace secured together, said braces extending transversely of said leg, means projecting from each upper brace for engagement with said circular hang rod to detachably secure said support members to said circular hang rod, and a latch member engageable with all of said support members for mechanically interlocking them into cooperative relationship with said circular hang rod to form a rigid structure, said means being so shaped as to prevent interference with the free sliding movement of garment hangers supported on said hang rod.

4. A garment rack comprising a hang rod for slidably supporting a plurality of garment hangers carrying garments to be displayed, a plurality of separate support members, and a latch member engageable with all of said support members for mechanically interlocking them into cooperative relationship with said hang rod to form a rigid structure with said hang rod so positioned relative to said support members as to prevent interference with the sliding movement of garment hangers mounted on said hang rod.

5. A garment rack comprising a hang rod for slidably supporting a plurality of garment hangers carrying garments to be displayed, a plurality of separate support members each comprising a leg and an upper and a lower brace secured to said leg in transverse relationship thereto, means on each of said upper braces for detachably securing each of said support members to said hang rod, means for holding said upper braces against relative pivotal movement, and means for mechanically interlocking said lower braces to hold said support members in cooperative relationship with said hang rod to form a rigid structure.

6. A garment rack comprising a circular hang rod for slidably supporting a plurality of garment hangers carrying garments to be displayed, a plurality of separate support members each comprising a leg and a pair of trans-

verse braces secured to said leg in longitudinally spaced relationship, means on one brace of each of said pairs of braces for detachably securing each of said support members to said hang rod in radially disposed relationship, said means being so shaped as to hold said circular hang rod spaced from said support members to prevent interference with the sliding movement of garment hangers supported on said hang rod, and releasable means for mechanically interlocking said support members and said hang rod to form a rigid structure.

7. A garment rack comprising a hang rod and a plurality of separate support members, each of said support members comprising a leg and a pair of braces secured to said leg in longitudinally spaced relationship, a first brace of each of said pairs of braces being detachably connected at one end to said hang rod, means engageable with the other end of each of said first braces to hold said first braces against relative vertical movement, a centerpiece, and releasable latch means on said centerpiece engageable with said second braces for interlocking said support members in cooperative relationship with said hang rod to form a rigid structure.

8. A garment rack comprising a circular hang rod and a support, said support comprising a plurality of radially disposed upper braces each having one end detachably secured to said hang rod, means engageable with the opposite end of each of said upper braces to hold said upper braces against relative vertical movement, a leg depending from each of said upper braces, a lower brace secured to each of said legs in parallel relationship to the upper brace of said leg, and means engageable with said lower braces to interlock them and hold said support against accidental separation from said hang rod.

9. A garment rack comprising a circular hang rod and a support, said support comprising a plurality of radially disposed upper braces each having one end in engagement with said hang rod, means in engagement with the opposite end of each of said upper braces to hold said upper braces against relative vertical movement, a leg depending from each of said upper braces, a lower brace secured to each of said legs in parallel relationship to the upper brace of said leg, a centerpiece in engagement with said lower braces, and interengageable latch means on said centerpiece and said lower braces to interlock said lower braces to form a unitary structure and hold said support against accidental separation from said hang rod.

10. A garment rack comprising a circular hang rod and a support, said support comprising a plurality of radially disposed upper braces each secured at one end to said hang rod, means engageable with the opposite end of each of said upper braces to hold said upper braces



against relative vertical movement, a leg depending from each of said upper braces, a lower tubular brace secured at one end to each of said legs in parallel relationship to the upper brace of said leg, and a centerpiece comprising a hub and a plurality of fingers extending radially from said hub, each of said fingers fitting within the opposite end of one of said tubular lower braces to interlock said lower braces and hold said support against accidental separation from said hang rod.

11. In combination with a member to be supported, a knockdown support comprising a plurality of separate legs, a first brace secured to and extending transversely of each of said legs, a second brace secured to each of said legs in parallel longitudinally spaced relationship to said first brace, means projecting from the outer end of each of said first braces for engagement with said member, a centerpiece engageable with the inner ends of said first braces to hold said first braces against relative vertical movement, a second centerpiece engageable with the inner ends of said second braces, and interengageable latch means on said second braces and said second centerpiece to hold said support against accidental separation from said member.

12. A support comprising a plurality of legs, a brace extending transversely from one end of each of said legs, a second brace extending transversely of each leg in parallel relationship to said first brace, a centerpiece engageable with each of said first braces, a second centerpiece engageable with each of said second braces, and interengageable latch means on one of said centerpieces and on the braces engageable therewith, for holding said legs against relative movement.

13. A centerpiece for a support having radially disposed tubular braces, said centerpiece comprising a hub and a plurality of fingers extending radially from said hub, a spring clip secured to said centerpiece, and detents projecting from said spring clip for latching engagement with radially disposed tubular braces.


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