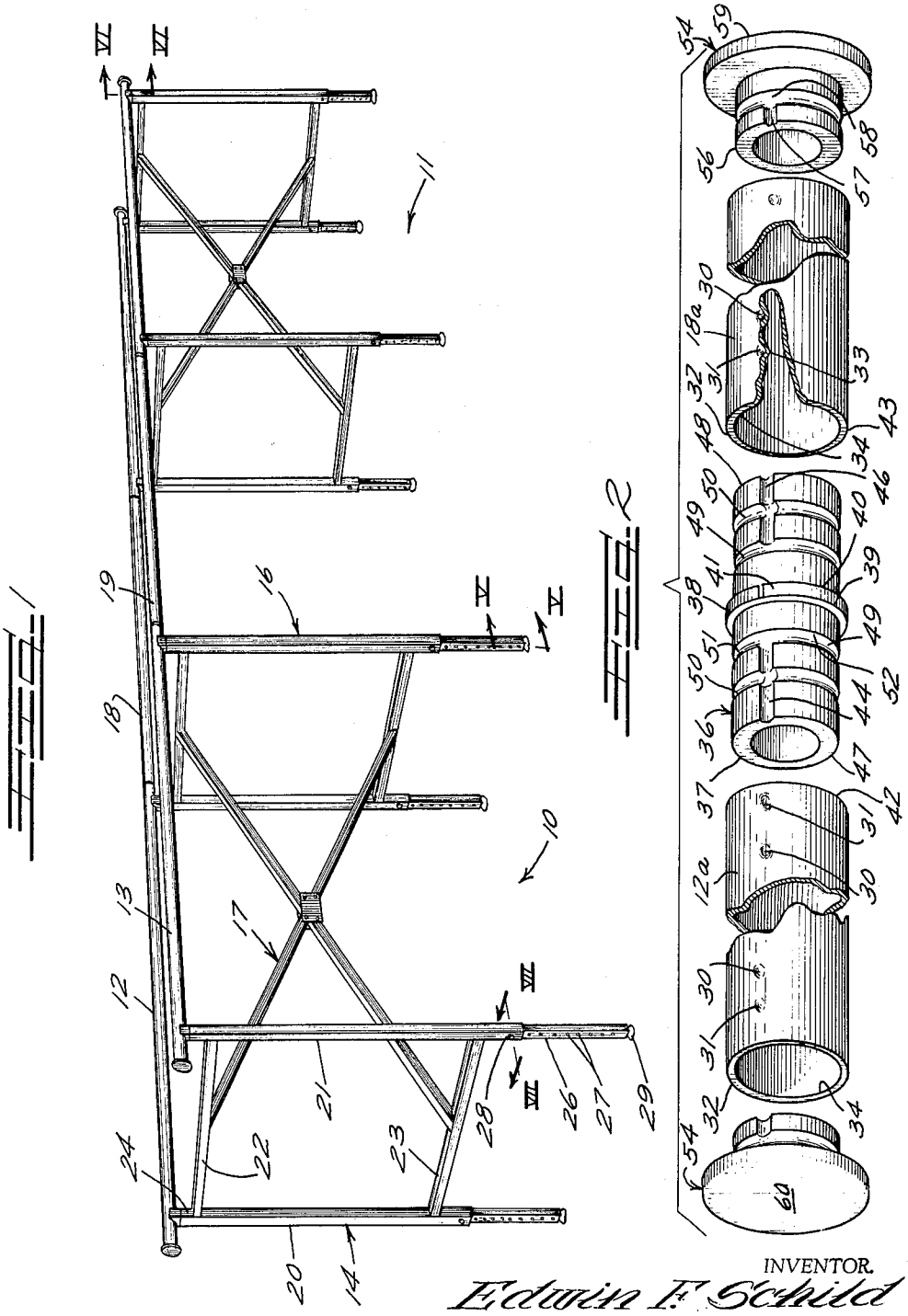
June 7, 1966 E. F. SCHILD 3,254,774

ADJUSTABLE GARMENT RACK

Filed March 27, 1964 2 Sheets-Sheet 1



INVENTOR.
Edwin F. Schild
BY
Hill, Sherman, Meroni, Gross & Simpson ATTORNEYS

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ADJUSTABLE GARMENT RACK

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FIG. 3

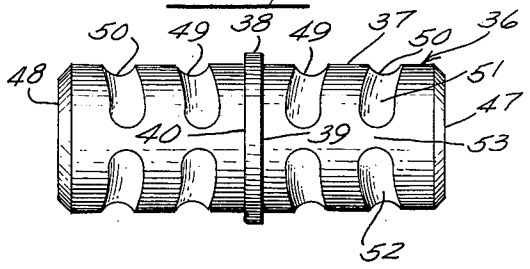


FIG. 4

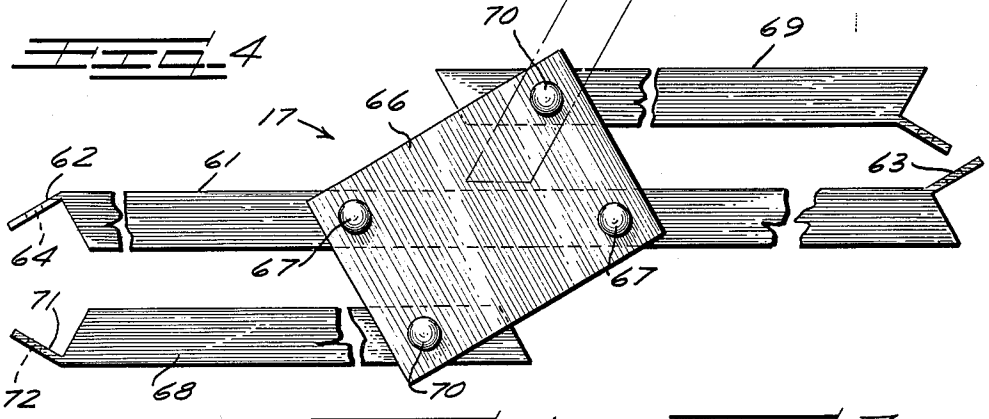


FIG. 6

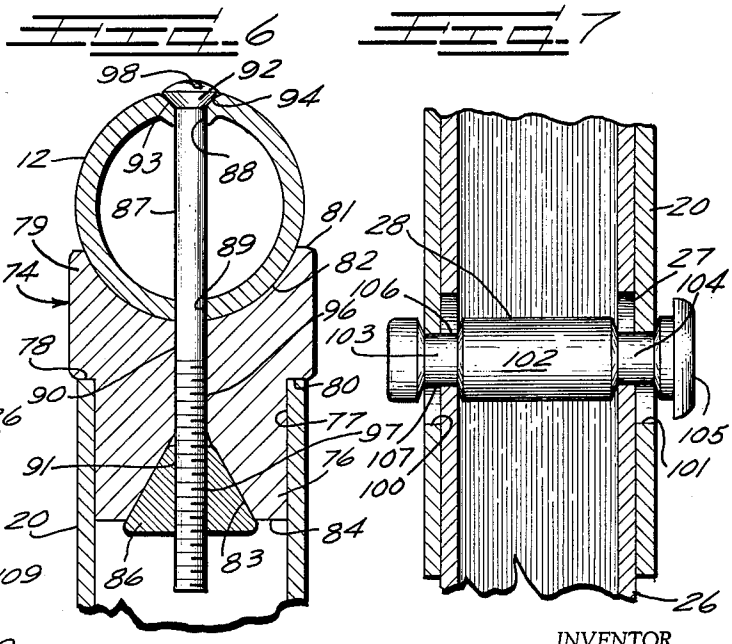


FIG. 5

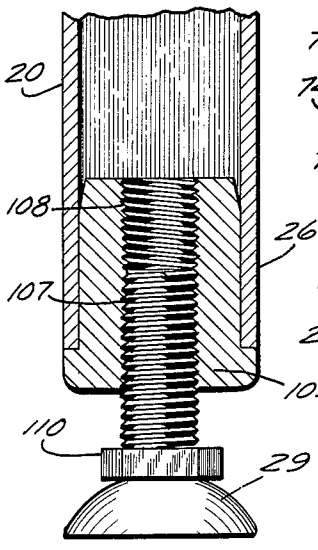


FIG. 7

INVENTOR.

Edwin F. Schild

BY

Hill, Sherman, Meroni, Gross & Simpson ATTORNEYS

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ADJUSTABLE GARMENT RACK

Edwin F. Schild, 1644 77th Court, Elmwood Park, Ill.

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5 Claims. (Cl. 211—182)

This invention relates generally to a rack for storing or displaying hanging garments and the like.

More particularly the invention relates to a rack constructed for rapid assembly and disassembly and which provides a basic rack section that can be conveniently connected to one or more similar sections to provide a continuous rack having a length equal to or greater than two basic sections. In addition, the invention includes novel means for connecting the basic sections and also features details of construction for adjusting the height of the racks, for leveling the racks, for facilitating and compacting packaging of the racks in disassembled form and for providing simplified assembly procedures.

It is an object of the present invention to provide a garment rack constituted of a basic rack section that can be easily connected to one or more similar sections to provide a long, continuous rack.

Another object of the present invention is to provide a garment rack incorporating provisions for easy and rapid assembly and disassembly.

Still a further object of the present invention is to provide a garment rack comprised of separable components to facilitate packaging of a rack in disassembled form.

Another object of the present invention resides in the provision of simply designed yet effective means for connecting the various components of a basic rack section and for connecting two or more basic sections to provide a longer, continuous rack.

Yet another object of the present invention is to incorporate means for easily adjusting the height of the rack.

Many other features, advantages and additional objects of the present invention will become manifest to those versed in the art upon making reference to the detailed description which follows and the accompanying sheets of drawings, in which preferred structural embodiments incorporating the principles of the present invention are shown by way of illustrative example only.

On the drawings:

FIGURE 1 is a perspective view of two basic rack sections constructed in accordance with the principles of the present invention and connected by means including a spacer rail for providing a long, continuous rack;

FIGURE 2 is a perspective view of a rack rail and associated parts illustrated in somewhat exploded form to show the relation between the various parts;

FIGURE 3 is a side elevational view of a rail connector or coupling;

FIGURE 4 is a side elevational view of a cross-support brace member of the present invention;

FIGURE 5 is a fragmentary vertical elevational view of a lower portion of a rack leg member with parts thereof shown in elevation;

FIGURE 6 is a fragmentary vertical sectional view of a top portion of a rail support member having a rail connected thereto with parts shown in elevation;

FIGURE 7 is a fragmentary vertical sectional view of a rail support member and a leg member with a locking pin for connecting the two shown in elevation.

As shown on the drawings:

Referring to the drawings, FIGURE 1 illustrates a pair of basic rack assemblies or stands indicated generally at reference numerals **10** and **11** and constructed in accordance with the principles of the present invention. The assemblies **10** and **11** are similar and each comprises generally a pair of parallel spaced horizontally

extending rails **12** and **13** supported on a pair of rail support sections **14** and **16**.

In order to rigidify the rail support sections a cross support brace member **17** is detachably secured thereto for interconnecting the rail support sections **14** and **16** and for maintaining the sections in fixed assembly.

One aspect of the present invention resides in the provision of means for interconnecting two or more basic rack assemblies in order to provide a long, continuous, uninterrupted rack and for this purpose a pair of spacer rails **18** and **19** are shown connecting rails **12** and **13** of the rack assemblies **10** and **11**.

The spacer rails can be fabricated for any given length to provide a span in between basic rack assemblies limited only by the strength of the spacer rails and the weight or load to which they are subjected. In addition the spacer rails can be omitted completely and the rails of the basic rack assemblies can be directly interconnected, as will become more apparent hereinafter.

The rail support sections **14** and **16** are more particularly characterized as comprising a pair of vertical support members **20** and **21** which extend vertically under the rails **12** and **13** respectively in order to support the rails and are maintained in spaced, parallel, co-extensive relation by means of a pair of horizontally extending bar members **22** and **23** which are connected in fixed assembly by any suitable means, for example, a weld as at **24** to the upper and lower end portions respectively of the support members **20** and **21**.

The vertical support members **20** and **21** are hollow and may present a square configuration in horizontal cross-section and in order to provide for vertical adjustment thereof for regulating the height of the rails **12** and **13**, each of the support members is provided with a leg member as at **26** which is housed within the support member and is telescopically extensible therefrom. The leg members are provided with a plurality of vertically spaced holes as at **27** through which may be extended a locking pin **28** which also extends through a hole as at **100** formed in the lower portion of the support member for locking the leg in a desired position of vertical adjustment. At the lower end of each of the leg members **26** is a leveler **29** which may be utilized for fine vertical adjustment to accommodate any uneveness in a floor surface or other support upon which the rack may be situated.

The rails **12** and **13** and the spacer rails **18** and **19** are similarly constructed and may comprise hollow, elongated tubing constructed of any material having suitable properties of strength and inflexibility and may also be chrome-plated to enhance the appearance of the rails as well as to reduce wear. Referring to FIGURE 2, a pair of rail sections **12***a* and **18***a*, which may correspond, for example, to the rail **12** and the space rail **18** of FIGURE 1, are illustrated in axial alignment and it will be noted that each of the rails have a pair of longitudinally spaced and aligned dimples **30** and **31** formed in the outer periphery of a tubular wall member **32** and which project radially inwardly as at **33** from an inner surface **34** of the wall **32**.

In order to interconnect rails **12***a* and **18***a* in the event that it is desirable to provide a lengthened, continuous rail, the invention contemplates the provision of a rail coupling or connector **36** having an elongated cylindrical configuration and having a peripheral wall **37** dimensioned such that the outer diameter thereof is only slightly less than the diameter of the inner surface **34** of the rails **12***a* and **18***a*.

In connected assembly, the coupling **36** is inserted in telescopic relation substantially an equal distance into the rails **12***a* and **18***a*. Substantially axially centrally of the connector **36** is formed an enlarged diameter radially

outwardly extending annularly shaped collar 38 comprised of a pair of axially spaced shoulder surfaces 39 and 40 joined by an outer peripheral wall 41. In connected assembly, the connector 36 is inserted at the ends thereof into the rails 12*a* and 18*a* until interfacing ends 42 and 43 thereof abut the shoulder surfaces 39 and 40 of the connector. The diameter of the peripheral wall 41 and the outer diameter of the walls 32 of the rails are equal, such that when the rails and the connector are telescopically assembled, the outer walls thereof will present a continuous, uninterrupted surface.

As illustrated, a pair of axially aligned grooves 44 and 46 are formed in the outer periphery of the connector 36 and extend respectively from end walls 47 and 48 axially inwardly a given distance toward the collar 38.

Also formed in the outer periphery of the connector are two pairs of transverse grooves which intersect, respectively, grooves 44 and 46. Each of the pairs comprises one groove 49 which intersects its respective axial groove at the inner terminus thereof and another groove 50 which intersects the axial groove substantially centrally thereof.

When the rails 12*a* and 18*a* are telescoped over the ends of the connector 36, the dimples 30 and 31 of the rails are aligned with the axial grooves 44 and 46 of the connector in order to permit insertion thereof and when the ends of the rails are in abutting engagement with the shoulder surfaces 39 and 40 respectively, the dimples will be in radial alignment with the transverse grooves 49 and 50.

It will be noted that the transverse grooves are formed such as to provide a pair of generally helically wound threads as at 51 and 52 which are inclined toward the center or collar 38 of the connector and which terminate, as best illustrated in FIGURE 3, in circumferentially spaced relation to provide a solid portion 53 therebetween. It will be apparent therefore, that after the rails are telescoped over the connector, rotation of the rails in clockwise or counterclockwise direction relative to the connector will have the effect of threading the respective dimples 30 and 31 thereof into grooves 51 or 52 in order to engage the rails and the connector in threaded relation and also to urge the ends 42 and 43 of the rails into snug abutment with the collar 38 of the connector.

In order to provide a protective surface as well as to enhance the appearance of the racks, the open ends of the rails may be fitted with a rail end plug as indicated at 54 which comprises a cylindrical body portion 56 dimensioned to be inserted into the end of a rail and grooved as at 57 and 58 in a manner similar to the grooves of the connector 36 in order to be threaded onto the rail by means of a dimple, and is more particularly characterized as comprising an enlarged head portion 59 to overlie the end of the rail to provide an abutment for articles which may be hung on the rails and a smooth, rounded outer surface 60 for covering the exposed edges of the rails.

Referring to FIGURE 4, the cross support brace member 17 comprises an elongated unitary member 61 having reversely extending flange portions 62 and 63 at the ends thereof and apertured as at 64 to receive a fastener member such as a bolt (not shown) for connecting the ends of the members 61 to opposite horizontal bar members 22 and 23 of a pair of rail support sections 14 and 16. A pair of holding plates as at 66 are fastened in off-set relation to opposite sides of the members 61 by suitable fastening means, for example, a pair of rivets as at 67. Also fastened to the plates 66 are a pair of shorter members 68 and 69 connected for pivotal movement by means of a single rivet as at 70 and flanged and apertured as at 71 and 72 at the distal ends thereof for connecting by suitable fastening means to corresponding bar members of the rail support sections 14 and 16.

Thusly constructed, the cross support brace member 17 is particularly suited for compact packaging in a disassembled configuration as illustrated in the solid lines of FIGURE 4, and as shown in the dotted lines 73, the shorter members 68 and 69 can be easily pivoted when the brace member 17 is unpackaged and assembled.

Another feature of the invention resides in the arrangement for connecting a rail to a vertical support member and in FIGURE 6, wherein like parts are given like reference numerals, a support member 20 is provided with means for supporting a rail 12 wherein a rail support block member 74 is adapted to securely mount the rail on the support member.

More particularly, the block member 74 constitutes a first portion 76 dimensioned exteriorly thereof complementarily to an inner surface 77 of the support member 20 for insertion into a top open end of the support member defined by an upper wall 78 thereof.

A second portion 79 of the block member 74 is enlarged such as to define a lateral shoulder surface 80 at the uppermost end of the portion 76 to be received in abutting engagement by the top wall 78 of the support member 20. An upper surface 81 of the block member is contoured as at 82 to provide a seat for the rail 12.

The lower or first portion 76 of the block member 74 is laterally expansible, that is, can be spread against the inner surface 76 of the support member 20, and for this purpose may be made of plastic or like resilient material. An upwardly converging conical cavity 83 is formed in a lower surface 84 of the block member for receiving a complementarily shaped expander member 86 which may be urged upwardly into the cavity 83 for laterally expanding the lower portion 76 of the block member for preventing withdrawal thereof after assembly.

In order to urge the expander 86 into the cavity 83, and also to clamp the rail 12 onto the block member 74, an elongated stud 87 is inserted through a pair of diametrically opposite bores 88 and 89 formed in the rail 12 and also through aligned bores 90 and 91 formed respectively in the block members 74 and the expander 86. The top end of the stud 87 forms an enlarged head 92 tapered as at 93 for contiguous engagement with a depressed surface 94 surrounding the bore 88. The lower end of the stud 87 is threaded as at 96 for engagement with threads 97 formed in the bore 91 of the expander whereby rotation of the stud to thread the lower portion thereof into the expander will tend to urge the expander upwardly into the cavity 83 of the block member 74.

A slot 98 may be formed in the head portion 92 of the stud to facilitate rotation thereof by means of a tool such as a screw driver.

In FIGURE 7, wherein parts similar to parts shown elsewhere are given like reference numerals, a leg member 26 is shown telescopically inserted into a vertical member 20 for purposes of adjusting the height of the rack. It will be noted that a pair of aligned holes 100 and 101 formed in the support member 20 are dimensioned substantially similarly to and alignable with the holes 27 formed in the leg member 26.

In order to lock the leg member and the support member in any position of vertical adjustment and also to provide for quick change of adjustment as well as quick disassembly, the locking pin 28 comprises an elongated cylindrical body portion 102 grooved at opposite ends thereof as at 103 and 104. The body portion 102 is diametered such as to be readily insertable into the aligned holes formed in the support member 20 and the leg member 26, and when assembled is inserted such that the adjacent holes of the support member and the leg member are aligned with one of the grooves 103 and 104. After such alignment, a downward force on the support member 20 will tend to move the peripheral walls of holes 100 and 101 into engagement with a top portion 106 of the peripheral walls of grooves 103 and 104, and the peripheral walls of the holes 27 of the leg member into engagement with a lower surface 107 of

grooves, thereby not only locking the leg member and the support member in vertical adjustment, but also precluding axial withdrawal of the locking pin **28** while a load is being supported by the support member **20**.

In order to facilitate insertion and withdrawal of the locking pin **28**, an enlarged head portion **105** may be formed at one end thereof.

The degree of vertical positioning of the racks by means of the locking pin arrangement is determined by the vertical spacing of the holes in the support members and the legs, and in order to provide fine vertical adjustment as well as to compensate for uneven floor surfaces or the like, the leveler member **29**, as best illustrated in FIGURE 5, includes a threaded stud **107** adapted to be received in a threaded bore **108** of a foot plug **109** inserted into the bottom open end of a vertical support member **20**. Rotation of the leveler **29** will correspondingly vary the elevation of the rack, and in order to facilitate rotation thereof a nut member **110** is fixedly connected to the stud **107** whereby a conventional tool such as a wrench can be utilized to rotate the leveler, even when the rack is loaded with garments.

For purposes of appearance and to facilitate cleaning, the leg members **26** may also be chrome-plated and this may be particularly advantageous in such instances when a water mop is used in cleaning the floor surface upon which the rack rests. In addition, in order to reduce manufacturing costs, the connectors **36**, the rail end plugs **54**, the block members **74** and the foot inserts **109** may all be formed of plastic material or the like.

Although minor modifications might be suggested by those versed in the art, it should be understood that I wish to embody within the scope of the patent warranted hereon all such modifications as reasonably come within the scope of my contribution to the art.

I claim as my invention:

1. A garment rack comprising,
a plurality of horizontal rails,
a plurality of hollow elongated vertical support members under said rails and open at the top ends thereof,
a rail support block member for each of support members comprising a first portion dimensioned to be inserted into the open top end of its respective support member and an enlarged second portion dimensioned to overlie and bottom on the top end of its respective support member,
said first portions each being made of resilient material and being laterally expansible for tight pressing engagement with the inner surface of its support member upon insertion thereof to prevent withdrawal thereof from said support member, said second portions each having a top surface contoured complementarily to said rails for receiving and for supporting one of said rails,
an upwardly converging conical cavity formed in the bottom end of each of said first portions,
a complementarily shaped expander member in each of said cavities, and
means extending through each of said block members and through the respective rail supported thereby and engaging its respective expander member for clamping said rail onto said block member and for urging its expander member into its cavity to expand its first portion laterally into its respective support member.

2. A garment rack comprising,
a plurality of horizontal rails,
a plurality of hollow elongated vertical support members under said rails and open at the top ends thereof,
a rail support block member for each of said support members comprising a first portion dimensioned to be inserted into the open top end of its respective support member and an enlarged second portion

dimensioned to overlie and bottom on the top end of its respective support member,
said first portions each being made of resilient material and being laterally expansible for tight pressing engagement with the inner surface of its support member,
said second portions each having a top surface contoured complementarily to said rails for receiving and for supporting one of said rails,
an upwardly converging conical cavity formed in the bottom end of each of said first portions, a complementarily shaped expander member in each of said cavities,
a plurality of studs each of which extends vertically through a block member and the rail supported thereon and into its respective expander member,
a threaded portion of each of said studs, and
a complementarily threaded bore in each of said expanders for receiving the threaded portion of its stud,
whereby rotation of a stud will urge its expander into the cavity of its respective block member to expand and to prevent withdrawal of its block member from its support member and for clamping its respective rail to its block member.

3. A garment rack according to claim **2** wherein the rails have vertical openings receiving the studs and the openings are provided with a recessed shoulder means for supporting heads on the studs, the upper surfaces of the studs conforming substantially to the contour of the outer surface of the rails.

4. A garment rack assembly comprising, in combination,
a first stand for one end of the assembly,
a second stand for the other end of the assembly,
each of said stands comprising,
at least two pairs of vertical support members,
at least two horizontally extending bar members interconnecting each of said pairs of vertical support members,
diagonally extending reinforcing members extending between the horizontal bar members to provide a rigid self-supporting stand usable separately from the rack assembly, and
a pair of horizontal smooth tubular rails extending parallel along the top of the stand, each of said rails supported adjacent each of its ends by one of said vertical support members,
a pair of horizontal smooth tubular spacer rails for extending between said first and said second stands, and
connectors telescopically mounting the ends of said spacer rails respectively to the inner facing ends of said rails of said first and said second stands whereby said spacer rails interconnect said first and said second stands and are supported solely at their ends by said first and said second stands,
the other ends of said racks of said first and said second stands being adapted to telescopically receive additional ones of said connectors for adding additional spacer rails and stands to said rack assembly.

5. A garment rack assembly as defined in claim **4** and including finishing end plugs removably inserted into the exposed other ends of said rails of said first and said second stands.

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CLAUDE A. LE ROY, *Primary Examiner.*

CHANCELLOR E. HARRIS, *Examiner.*

W. D. LOULAN, *Assistant Examiner.*