March 18, 1952 R. A. MAGNUSON ET AL 2,589,269

GARMENT RACK

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Fig. 1

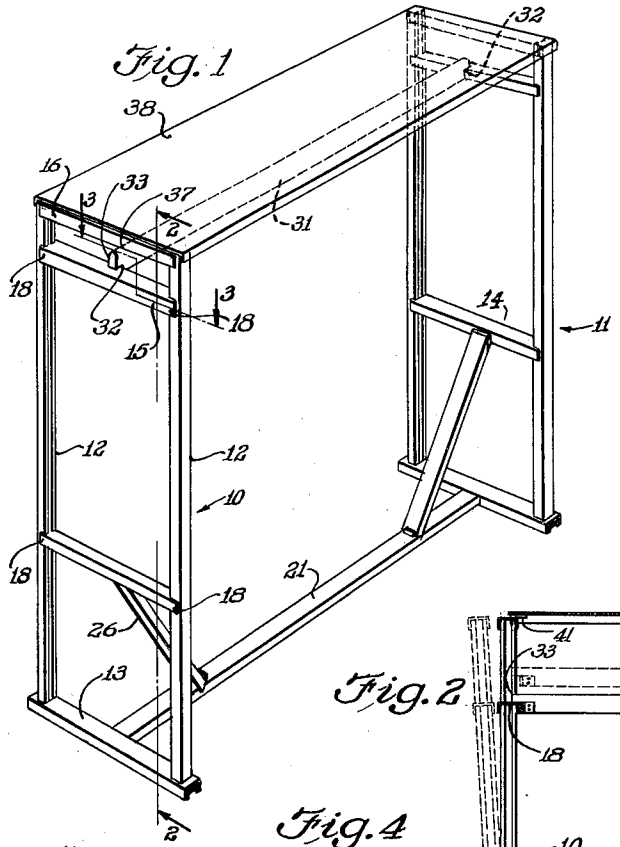


Fig. 3

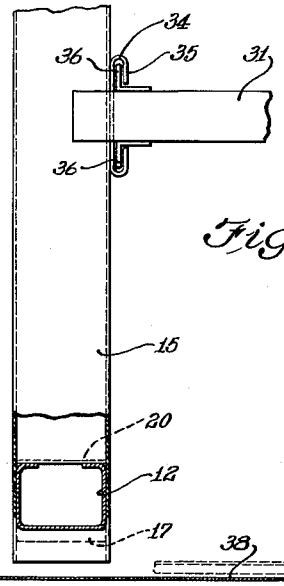


Fig. 2

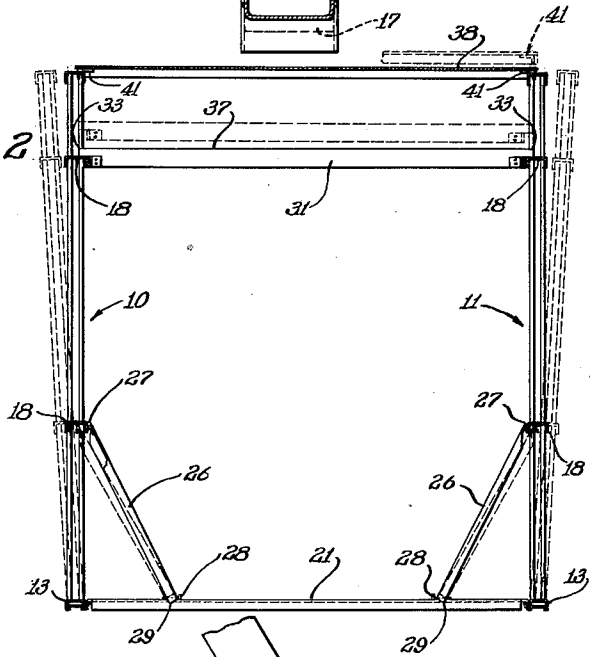
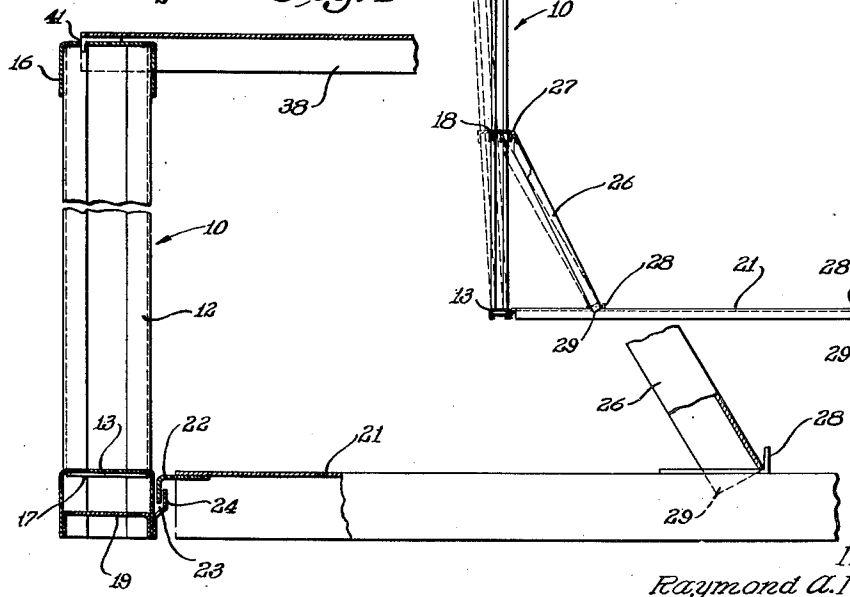


Fig. 4



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GARMENT RACK

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3 Claims. (Cl. 211—177)

1

This invention relates to collapsible or knock-down garment racks.

Among other objects, the invention aims to provide an improved knock-down rack of few parts which may be easily assembled and collapsed and occupying a small space when collapsed.

Another object of the invention is to improve the assembled rigidity of a rack of this character with lightweight easily assembled members.

A still further object is to provide a rack of this character in which the advantageous features may be embodied either in a sheet metal or a wood construction depending on choice and relative costs and availability of materials.

Other objects and advantages will become apparent from the description of one apparatus embodying the invention and illustrated in the accompanying drawing.

In said drawing:

Figure 1 is a perspective view of the assembled rack.

Fig. 2 is a longitudinal sectional elevation on plane 2—2 of Fig. 1, of the rack illustrating certain steps in the assembly of the rack and the manner in which certain members are prestressed to obtain rigidity.

Fig. 3 is a fragmentary plan section taken on plane 3—3 of Fig. 1; and

Fig. 4 is a fragmentary sectional elevation on an enlarged scale and taken approximately on the plane 2—2 of Fig. 1.

Knock-down garment racks provide additional or temporary storage space where desired. When not required they may be disassembled and either stored or moved to another location and reassembled. Heretofore such racks have not been wholly satisfactory either because of numerous parts, difficulty of assembly and lack of compactness for storage, or because of flimsiness or lack of rigidity.

In the illustrative rack the several elements though few in number and light in weight (whether made of wood or sheet metal) are so assembled and interconnected as to provide a rigid and stable rack. The supporting elements comprise two end frames 10 and 11 comprising upright posts 12 and a series of cross braces (four in this case) 13, 14, 15 and 16, rigidly connecting the posts together and serving other functions presently described. The posts and cross members may be made of wood or, as here shown, of sheet metal of relatively light gauge bent into channel shape or open-tube shape of rectangular section. The cross braces 14, 15 and 16 may

2

advantageously be of channel section wherein the base of the channel at each end of the cross brace is cut away to permit the channel flanges 18 to straddle the posts and to be appropriately attached thereto as by spot welding. The lower cross brace 13 extends slightly beyond the bottom ends of the post 12 and is reinforced by a supplemental shallow channel 19 located inside the channel of the cross brace 13 and having its flanges flush with the ends of the flanges of the channel 13 (Fig. 4). The two channels are preferably connected together by spot welding or the like. Posts 10 may be connected to the lower cross brace 13 by seating the posts in holes cut in the upper web of the cross brace. A portion of the post end may be bent to form a flange 17 (Figs. 3 and 4) lying inside and against the inner face of the cross brace. Also a portion of the latter displaced to form the hole for the post may be bent down to form a flange 20 lying against the post. The joint may then be completed by welding or brazing. The ends of the upper cross braces 16 are seated in notches formed in the top of each of the posts 12 by cutting away the inside post face at its top. The cross brace 16 may be further connected with the posts by spot welding or the like.

The end frames thus constitute two rigid structures which are light in weight and when disconnected from the rack are relatively flat and can be readily stored. The width of the end frames is preferably slightly greater than the width of the garments to be hung in the rack but if desired may either be narrower or wider.

The end frames are spaced from each other and detachably connected at their lower ends by a bottom rail 21 of channel section carrying at its ends connecting elements in the form of downwardly directed hooks 22 adapted to enter sockets 23 on the respective bottom cross braces 13 formed by clips 24 attached to the inner flange of the cross brace preferably midway of its length. The socket 23 may be somewhat wider than the thickness of the hook 22 to allow some play for purposes presently explained, without producing any looseness in the assembled rack. Rail 21 may advantageously be of open tubular section similar to that of the posts 12.

Braces 26 extend across the corners between the bottom rail 21 and the end frames 10 and 11 and having appropriate connections thereto. In the present instance the braces are hinged by ordinary hinges 27 to the inner flanges of the cross braces 14 and when in properly assembled relation the lower ends of braces 26 fall behind

stops 28 formed by clips welded to the upper brace of the rail 21. The braces are sufficiently wider than rail 21 so that the brace corners 29 straddle the rail and are thereby held against lateral displacement. To seat the braces behind the stops 28 the end frames 10 and 11 may be tilted outwardly relative to the rail 21 (for which purpose the socket 23 allows some play as aforesaid) and thereafter moved inwardly (see Fig. 2) until the braces seat tightly against stops 28. This tight connection is maintained by appropriately connecting together the upper ends of the frame members by a tension member which pre-stresses the frame members and thereby holds the braces 26 in compression to remove all play and produce a rigid assembly. The end frames whether of metal or wood yield sufficiently to permit them to pre-stressed for the aforesaid purposes. The tension member may advantageously be in the form of a garment hanger rail 31 connected to the cross braces 15, the latter being at the desired height for a hanger rail. In the present instance the rail is notched at 32 at each of its ends to provide a portion 33 extending over and resting upon the cross braces 15. The connection between the hanger rail and the cross braces is here shown (Fig. 3) in the form of a clip 34 connected preferably at the midpoint of the cross braces 15 and having inturned flanges 35 under which outwardly extending flanges 36 on the hanger rail seat. The latter flanges are formed by angle members connected to the sides of the hanger rail adjacent its ends. The latter may advantageously be of channel section having a rounded contour to provide a rounded top 37 for garment hangers. The length of the hanger rail is adjusted so that when seated in the connecting clips 34 it exerts a bending moment on the side frames to develop compression in the braces 26 for the aforesaid purposes.

A shelf 38 may advantageously rest on the top of the frames 10 and 11 so as to serve both as a cover for the garments and as a shelf. It may be made of sheet metal flanged at its sides and carrying at its ends downwardly extending flat hooks 41 which enter registering slots in the top of the upper cross braces 16.

In disassembling the rack, the shelf and hanger rail are first removed thereby releasing the side frames to be moved out as shown in dotted lines in Fig. 2, and withdraw the lower ends of braces 26 from their seats behind the stops 28. The bottom rail 21 may then be removed. The entire rack is thus knocked down and the individual elements which are few in number and light in weight may be readily stored in a small space.

If the rack be made of wood, the posts and cross braces are preferably made of rectangular section and connected together according to conventional wood joining practices. Whether made of sheet metal or wood, the several elements of the rack are both strong and light in weight.

In assembled condition the rack elements though light in weight are nevertheless so firmly interconnected as to provide a rigid structure.

Obviously the invention is not limited to the details of the illustrative rack since these may be variously modified. Moreover, it is not indispensable that all features of the invention be used conjointly since various features may be used to advantage in different combinations and subcombinations.

We claim as our invention:

1. A knock-down garment rack comprising, in combination, a pair of end frames each including vertical support elements and a plurality of horizontal cross bars connecting the support elements, brace members hinged to an intermediate one of said cross bars of each end frame, a bottom rail having connections thereon for joining to a lower cross bar of each end frame in a manner to permit swinging movement of said end frames relative thereto and said rail having seats thereon intermediate its ends to receive the ends of said brace members, and an upper connecting member having connections thereon adjacent its ends, engaging upper cross bars of the end frames for holding said frames drawn together against the action of said brace members with the latter in compression and having their ends received in said bottom rail seats.

2. A knock-down garment rack comprising, in combination, a pair of end frames each including vertical support elements and a plurality of horizontal cross bars connecting the support elements, brace members hinged to an intermediate one of said cross bars of each end frame, a bottom rail having connections thereon for joining to a lower cross bar of each end frame in a manner to permit swinging movement of said end frames relative thereto and said rail having stops thereon intermediate its ends to receive the ends of said brace members and an upper connecting member having connections thereon adjacent its ends to engage upper cross bars of the end frames for holding said frames drawn together against the action of said brace members with the latter in compression, said brace members being channel-shaped to receive the bottom rail with the brace members engaging said stops.

3. A knock-down garment rack comprising, in combination, a pair of end frames having a pair of vertical bars with cross bars at the upper and lower ends thereof, a bottom rail having detachable connections at its opposite ends with the lower cross bars of said end frames engageable as an incident to downward movement of the rail relative to said cross bars, diagonal braces interposed between said end frames and said bottom rail, and an upper rigid connecting member detachably connected at its opposite ends with the upper cross bars of the end frames to hold the end frames drawn together with said braces under compression and acting on the bottom rail to maintain the connection between the ends of said rail and the end frames against disengagement, said end frames being capable of yielding when drawn together for connection by the upper connecting member.

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