Jan. 17, 1967 S. P. DI MARCO 3,298,537

GARMENT RACK HINGE AND LEG ASSEMBLY

Filed June 16, 1965

Fig. 1

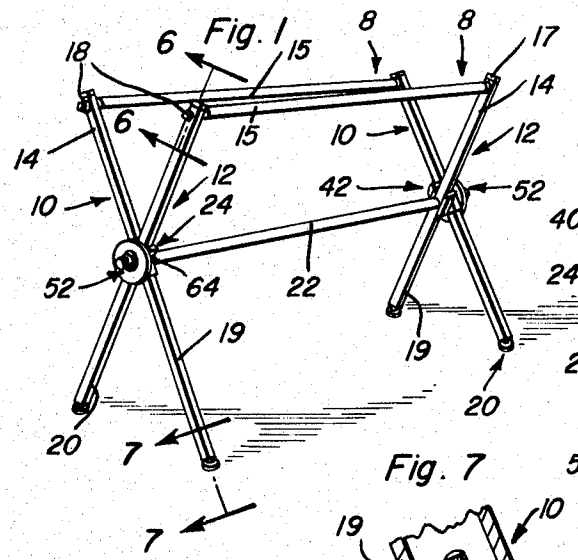


Fig. 2

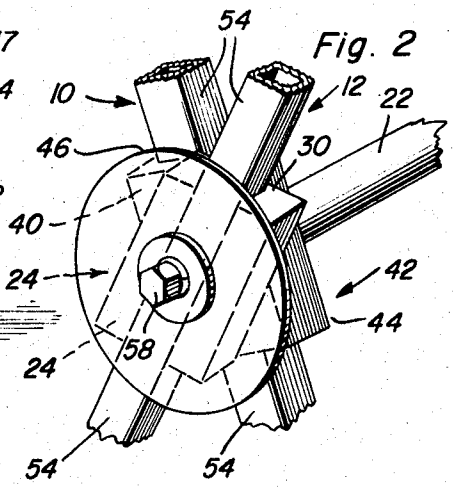


Fig. 7

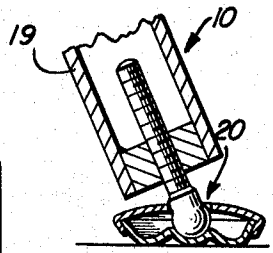


Fig. 3

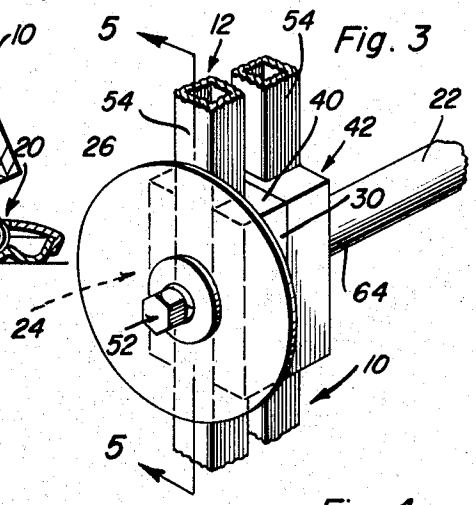


Fig. 5

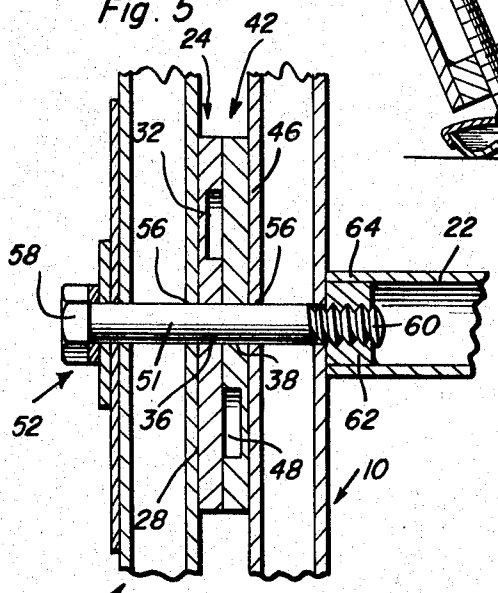


Fig. 4

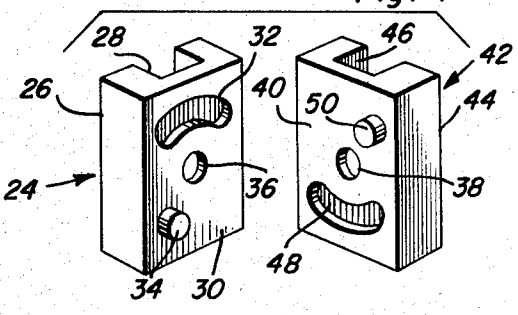
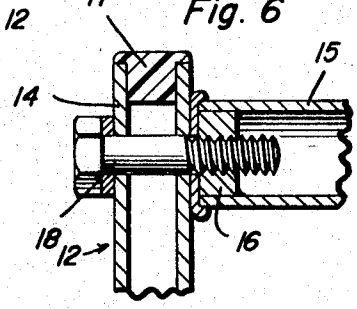


Fig. 6



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United States Patent Office

3,298,537

Patented Jan. 17, 1967

3,298,537

GARMENT RACK HINGE AND LEG ASSEMBLY

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Filed June 16, 1965, Ser. No. 464,375
6 Claims. (Cl. 211—178)

The present invention relates to certain new and useful improvements in portable folding stand-type garment suspending and displaying racks of the character currently in widespread use of clothes retailing departments of merchandising stores and which are customarily brought into use when dresses and the like are placed on sale and which, after temporary use, are compactly folded and stored away for future use.

Racks in this category which are in popular use almost everywhere for temporary display and quick sale purposes are generally well known. Nevertheless, it is significant for classification and other purposes to point out with particularly that the specific rack herein under consideration is the type wherein a pair of inverted U-shaped frames are assembled so that the legs thereof can be crossed and hingedly or pivotally joined together. These legs define X-shaped end frames or, alternatively, leg frames and the crossed portions have horizontal assembling and pivoting bolts which are such that the legs of the respective leg frames can be and are collapsed into compact relationship when folded. The horizontal bight portions of the frames provide the support rods on which the dresses or merchandise is hung, draped or otherwise displayed. Ordinarily, the component parts of the U-frames are made of wood and the wooden legs of the leg frames are rectangular and hinged or pivoted in overlapping relationship in one way or another. It is common in the art to provide hinging and bracketing means which functions to limit the spread of the paired legs of the respective leg frames so that the erected stand is self-standing.

An object of the present invention is to (1) dispense with the use of wooden legs as the primary components of the X-shaped leg frames (2) to utilize tubular metal or equivalent sturdy but lightweight legs and (3) to interconnect the crossed portions of said paired legs through the use of improved hinging and assembling brackets.

More particularly, novelty is predicated on the use of generally rectangular metal or equivalent brackets, more particularly, each bracket being of general rectangular form. To the ends desired the confronting inwardly disposed surfaces of the brackets, which are flat, are provided with unique coacting stop means to limit the opening and closing movements of the coacting brackets.

More explicitly, novelty is predicated on suitably paired precision-mated rectangular block-like leg assembling and hinging brackets which lend themselves to oriented performance in that the outwardly disposed vertical flat surfaces of the respective brackets are provided with open-ended channels adapted to receive the correspondingly shaped carefully proportioned portions of the coacting legs, the seated portions of the legs and also the brackets being provided with registering holes which constitute bearings and serve to accommodate an assembling and hinging bolt which is preferably such in construction that it has the additional function of assisting in installing a horizontal brace rod interposed between the crossed portions of the paired legs of the respective leg frames.

A general obective of the invention is to structurally, functionally and in other ways improve upon stand-type folding garment racks, a typical one of which is disclosed in an analogous patent on a Collapsible Garment Rack No. 2,706,829, issued to Charnin.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a view in perspective showing a collapsible or foldable stady-type garment rack (for department and similar store use) constructed in accordance with the invention and set up for use.

FIG. 2 is an enlarged fragmentary perspective view detailing the featured leg frame, more particularly, the crossed legs in spread-apart relationship.

FIG. 3 is a view based on FIG. 2 but showing the crossed portions of the two legs folded as in the case when the frame is collapsed for storing or carrying.

FIG. 4 is a view in perspective showing the novel block-like leg assembling, bolting and hinging members.

FIG. 5 is an enlarged view with parts in section and elevation taken on the plane of the vertical section line 5—5 of FIG. 3.

FIG. 6 is a fragmentary detail view taken on the plane of the vertical section line 6—6 of FIG. 1.

FIG. 7 is an enlarged detail sectional view taken on the section line 7—7 of FIG. 1.

With reference to FIG. 1 it will be seen that the aforementioned inverted U-shaped frame units which go to make up the over-all folding or collapsible stand or rack are denoted by the numerals **8**, each frame unit being the same in construction. The commonly used rack (Patent 2,706,829 for example) is made up of wooden components or parts which are often subject to breakage and warpage and can become, after short use, quite unsightly in appearance when employed for example in displaying garments and apparel in a department store. One improvement in the present advance in the art is the use of folding knock-down vertical end frames (also called leg frames) wherein the legs, instead of being made of wood, are preferably made of durable but lightweight tubular metal. Since the leg frames are X-shaped when open and in use as shown in FIG. 1 and inasmuch as each leg frame is the same in construction a description of one leg frame will suffice for both. The companion legs in each leg frame are denoted by the numerals **10** and **12**. The upper end portions **14** are suitably plugged as at **17** connected together by hollow horizontal rounds or rod members **15** which have their end portions appropriately connected as at **16** and **18** to the upper ends of the legs as shown in FIG. 6. The lower end portions **19** of the legs are provided with swivelly mounted feet **20** (FIG. 7) and spread apart and provide X-shaped self-standing leg frames, as shown in FIG. 1. A horizontal brace rod **22** is provided between the median crossed portion of the legs of the leg frames and will be referred to later in the description of FIG. 5.

It is highly desirable in carrying out the principles of this invention to hingedly interconnect the crossed portions of the tubular metal or equivalent legs in a reliable and easy-to-operate manner. To achieve this result novel assembling and hinging means (of the type shown for example in FIG. 4) is herein advocated. The significant parts or components are referred to herein as hinges or hinging members. Each hinge or bracket comprises a substantially rectangular smooth-finished aluminum or equivalent block. The hinge bracket or block at the left (FIG. 4) is denoted by the numeral **24** and is provided in an outer flat face **26** with an open ended channel **28**, the interior flat face **30** being provided at the top with an arcuate or an equivalent slot **32** and at a lower corner portion with a short projecting cylindrical stud **34**. The central axial portion of this block **24** is provided with a horizontal aperture providing a bearing **36** which in practice is

adapted to line up and register with a similar aperture or bearing 38 provided therefor in the inner flat face 40 of the block-like bracket 42. These two brackets 24 and 42 are complemental and work satisfactorily together, in the manner shown in FIG. 5. The exterior flat surface 44 of the bracket 42 is likewise provided with an open ended channel 46 and on its interior side at the bottom with an arcuate slot 48 similar to the or an equivalent slot 32 and in the upper right hand corner with a cylindrical projecting stud 50 similar to the one 34. It follows that when the faces 30 and 40 are brought together in opposed or confronting and assembled relationship the bearings 36 and 38 line up and the stud 50 is registered with and works back and forth in the slot 32 while the stud 34 simultaneously projects into and works back and forth in the slot 48. An assembling and pivoting bolt or equivalent journal 52 (see FIG. 5) is provided. More specifically coacting portions of the legs; that is, the portions denoted at 54 (FIGS. 2 and 3) are seated in their respective channels 28 and 46. The cross-section of each channel and leg is uniform to achieve the well adjusted mechanical relationship shown in FIGS. 2, 3 and 5. The seated portions 54 of the legs are provided with appropriately aligned bearing apertures or holes 56 which (as shown in FIG. 3) line up with each other and permit the shank 51 of pivot bolt 52 to be passed therethrough and also through the bearing holes 36 and 38. The headed end of the bolt is denoted at 58 and the screw-threaded end is denoted at 60 and in practice it can be threaded into a screw-threaded sleeve nut 62 anchored in the end portion 64 of the aforementioned brace rod 22. Thus, by properly lining up the brackets 24 and 42 and the legs 10 and 12 and passing the bolt 52 through the bearing holes, the leg frame can be assembled for ready and reliable use. The face-to-face contact of the surfaces 30 and 40 insures smooth and unhampered opening and closing of the legs. The limit stop lugs 34 and 50 extending into their slots 48 and 32 function to limit the opening and closing movement of the hinging brackets. It will be seen therefore that the disclosed arrangement characterized by crossed legs in X-shaped leg frames embodied in a collapsible garment rack results in the provision of a simple, practical and highly satisfactory rack construction.

It is realized that X-shaped leg frames are capable of being used in many and varied types of cribs, book racks and other foldable knock-down furniture and supports. The featured construction herein disclosed lends itself admirably well to the field of invention herein shown and described and hence the objectives are satisfactorily and acceptably achieved. Acordingly, a more extended description is believed to be unnecessary.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A folding garment suspending and displaying support for use in a department store or similar establishment comprising: a portable stand-type rack embodying a pair of duplicate vertical leg frames each embodying a pair of legs having corresponding median portions adapted to cross each other, means for assembling and pivotally joining the crossed portions of said legs and permitting them to be spread apart into X-shaped self-standing relation or, alternatively, folded together into overlapping compact relation for manual handling and out-of-the-way storage, hanger rods mounted between oriented upper ends of the legs of the respective leg

frames, a horizontal bracing and stabilizing rod located between and connecting the crossed portions of the legs of said leg frames, the assembling and joining means for each pair of legs comprising a pair of hinging brackets having flat inward confronting faces opposed and movably abutting each other in shiftable relationship, the inward face of each bracket having a groove and a rigid laterally projecting stud constituting a stop pin, the respective pins projecting into their respectively oriented and coordinating grooves, and said grooves and their pins constituting and providing limit stops, each bracket having a central right angularly disposed hole extending therethrough and providing a bearing and both bearings being aligned, and said pivot means extending therethrough.

2. The structure according to claim 1, and wherein each bracket is provided with an outwardly disposed face having a vertical open-ended channel in which a cooperating portion of the coacting leg is seated, the portions of said legs which are seated in said channels being apertured, said apertures being alined with each other and also said bearings and said pivot means extending therethrough.

3. The structure according to claim 2, and wherein said pivot means comprises a bracket and leg assembling, connecting, and pivoting bolt.

4. The structure according to claim 2, and wherein each bracket comprises a rectangular block, said channel being non-circular in cross-section and said legs being likewise non-circular and fitting conformingly and compatibly in their respective channels.

5. For use in the construction of a folding collapsible portable garment rack, an openable and closeable X-shaped leg frame comprising: a pair of duplicate tubular rigid legs having median portions adapted to cross each other, said median portions being provided with aligned apertures constituting bolting holes, a pair of like assembling and hinging brackets interposed between the coacting crossed portions of the respective legs, each bracket being of general rectangular block-like form and having an inner flat face, the respective flat faces of said brackets being in confronting shiftably movable relationship, said flat faces provided with grooves and also with projecting studs, the stud on one face fitting into the groove on the other face to thus interconnect the brackets for limited relative movement, said brackets being provided with bolt holes aligned with said first-named bolt holes, a bolt passing through the respective bolt holes and serving to assemble the legs and also the brackets, the outer faces of said brackets being provided with open-ended channels, and intermediate portions of the respective legs being seated and operatively retained in said channels.

6. The structure defined in claim 5, and wherein said pivoting and assembling bolt has a head at an outer end engaging an outwardly disopsed leg and is provided at an inner end with a screw-threaded end portion extending through and beyond the bolt hole in the innermost leg and being adapted not only to pivotally bolt the legs and brackets together in assembled relationship but having the additional function of connecting a screw-threaded nut provided in a coacting end portion of a horizontal brace rod.

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