April 16, 1957 W. FISK 2,788,888

SHIPPING CARTON AND READILY INSTALLABLE GARMENT HANGER RACK CONSTRUCTIONS

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Fig. 1.

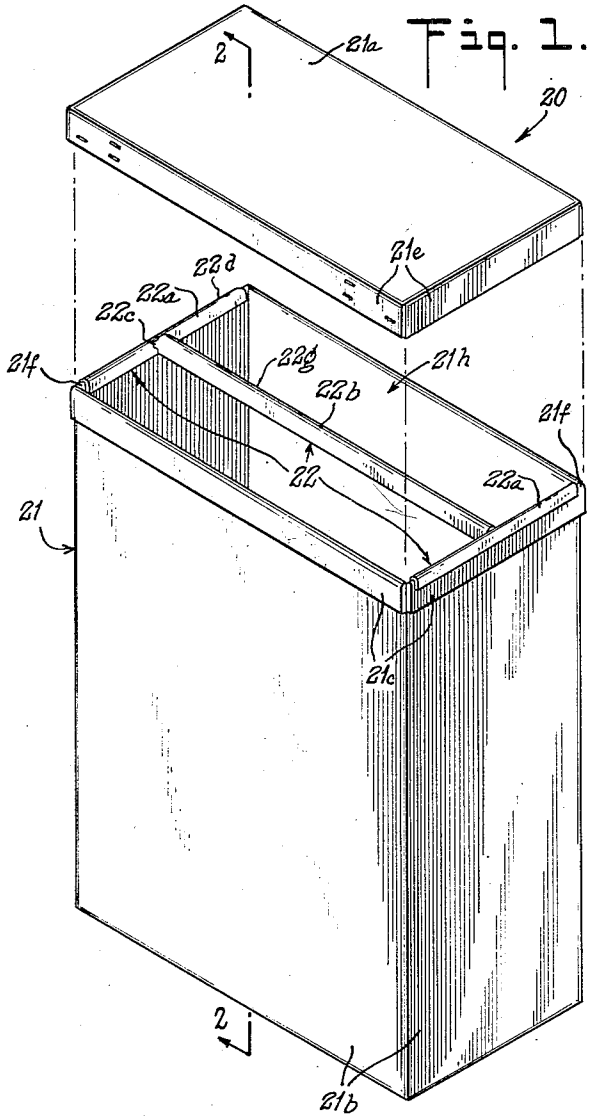
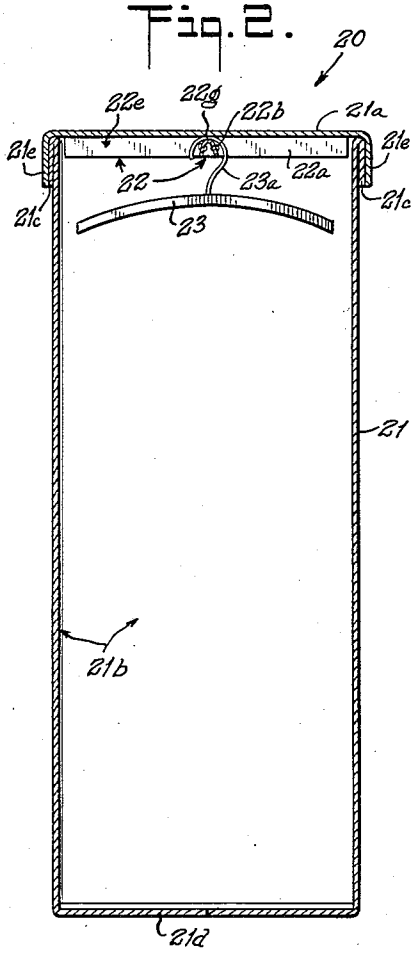



Fig. 2.



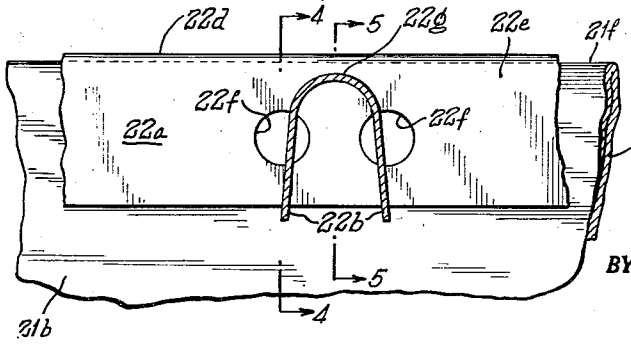




Fig. 3.

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SHIPPING CARTON AND READILY INSTALLABLE GARMENT HANGER RACK CONSTRUCTIONS

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Fig. 4.

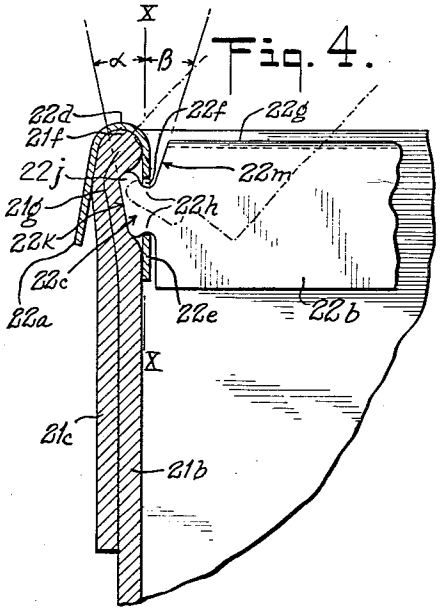



Fig. 5.

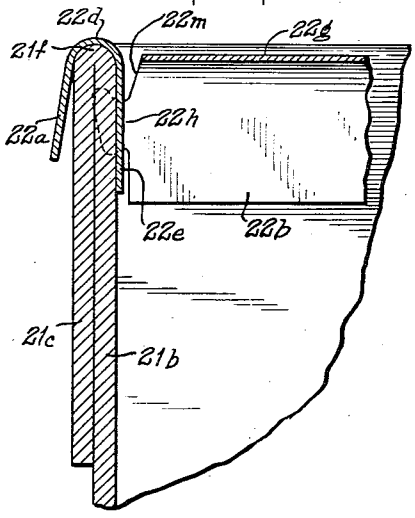



Fig. 6.

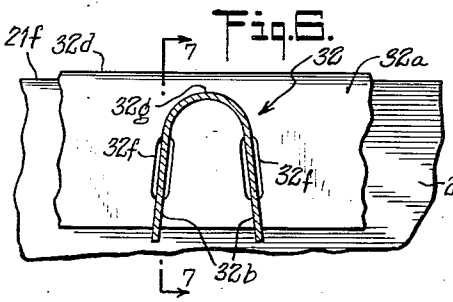



Fig. 7.

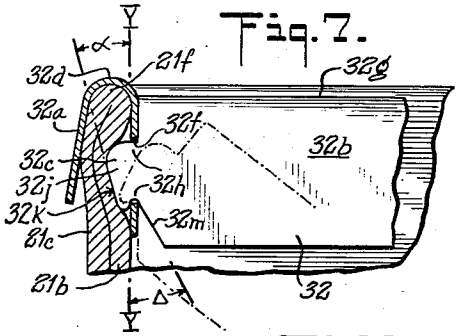



Fig. 8.

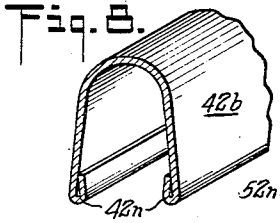



Fig. 9.

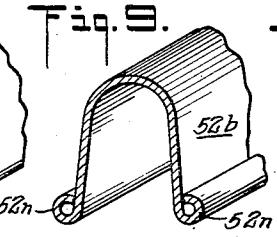



Fig. 10.

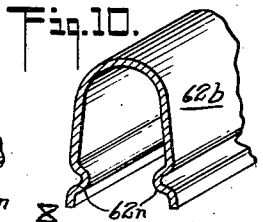



Fig. 11.

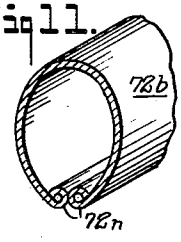



Fig. 12.

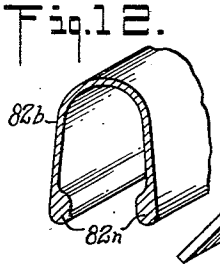



Fig. 13.

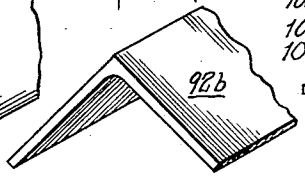
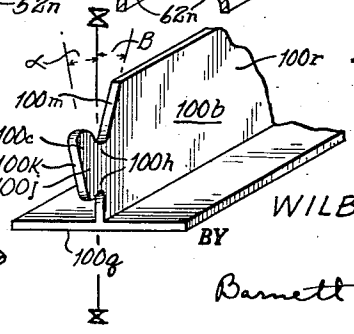



Fig. 14.




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# SHIPPING CARTON AND READILY INSTALLABLE GARMENT HANGER RACK CONSTRUCTIONS

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Application February 8, 1954, Serial No. 403,858

11 Claims. (Cl. 206—7)

This invention relates to garment shipping cartons, and to garment hanger rack constructions that are readily installable in shipping cartons of conventional manufacture.

Among the objects of the invention is to provide shipping cartons and garment hanger rack constructions of the character described comprising few and simple parts that are readily assembled to provide a relatively light weight structure yet is rugged and capable of withstanding rough use in transportation without disarranging garments being shipped in cartons, which garment hanger rack constructions are of the knock-down type easily installed in or removed from cartons of conventional manufacture, which rack constructions when installed reinforce the carton structure insuring delivery of the garment contents intact, and which shall be cheap to manufacture in small lots or in quantity production, and which shall be efficient and practical to a high degree in service.

Other objects of the invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists of features of constructions, combinations of elements and arrangements of parts which will be exemplified in the constructions hereinafter disclosed, the scope of the application of which will be indicated in the claims following.

In the accompanying drawing in which embodiments of the invention are shown:

Fig. 1 is a perspective view of a carton with a hanger rack construction erected and installed in position suitable for shipping garments embodying the invention, the cover closure for an open end of said carton being shown raised to fully expose said rack construction in place.

Fig. 2 is a cross-sectional view of the garment shipping carton corresponding to a cut taken on line 2—2 in Fig. 1 but showing the cover closure seated on the carton body and a coat hanger having the hook suspension portion thereof engaging over the rack rail, the latter being retained between the carton body walls and the cover closure.

Figs. 3, 4 and 5 are enlarged fragmentary views of an end of the rack rail interlocked with a carton rim edge anchoring member showing certain details of the latch connection interlockment feature as shown in Fig. 2; Figs. 4 and 5 corresponding to the cross-sectional views taken on lines 4—4 and 5—5, respectively, of Fig. 3, in Fig. 4, of which is shown the resilient pressure action of a displaced carton wall portion serving to retain said interlockment, the inserting position of the rack latching hook end for said interlockment being indicated in dot and dash lines.

Fig. 6 is an enlarged fragmentary view similar to Fig. 3 but showing a modified double slot construction for use with either of the latching hook ends shown in Fig. 4 or Fig. 7.

Fig. 7 is an enlarged fragmentary view taken on line 7—7 in Fig. 6 and is similar to Fig. 5 but showing a modified, that is, a reversely positioned view of the latching hook end in Fig. 5 and in dot and dash lines indicating



the insertion position of said latching hook end for said interlockment.

Figs. 8 to 13 are perspective views of various sectional stock structures from which rack rails may be made each similar to that shown in Figs. 1 to 5 with either single or double slot constructions shown in Fig. 3 or Fig. 6, respectively, and with either of the latching ends shown in Fig. 4 or Fig. 7, and

Fig. 14 is a perspective view of a T-sectional stock structure like each of those shown in Figs. 8 to 13, requiring only a single hook latching end.

Referring in detail to the drawing, 20 denotes a shipping carton which may be of any required shape and size and a readily installable garment hanger rack construction 22 embodying the invention in which carton 21 may be of any conventional manufacture, garment hanger rack 22 being of the knock-down type which is seen to comprise a pair of carton rim edge anchoring members 22*a* which interlock with, that is, coupled through latching hook ends 22*c* of an inverted U-shaped rack rail 22*b*. On bight portion 22*g* of the latter when garment hanger rack 22 is installed, hook suspension portions 23*a* of coat hangers 23 are supported and positively retain against disarranging carton packed garments fitted on hangers 23 during transportation and rough handling when closure cover 21*a* is seated in effective position to seal carton open end 21*h*, as is clear from Figs. 1 to 6.

Carton 21 may be made of corrugated cardboard or other suitable sheet material and, as here shown, forms a box of rectangular cross-sectional shape, sized to correspond to the required width and length of the garment to be packed for shipment therein, said carton 21 being formed with a suitable bottom wall 21*d*, side and end walls 21*b*, and open end 21*h* having downwardly folded flaps that form a reinforcing rim border encircling side and end wall extension 21*c* on which closure cover 21*a* having off-standing rim flange 21*e* snugly seats, as is clear from Figs. 1 and 2.

Each garment hanger rack anchoring member 22*a* of said pair may be made of an elongated bent strip of sheet material folded with said bight 22*d* to have the inverted U-shaped section sized and shaped to embraceably be fitted onto said carton open end rim border down-folded flap extension 21*c*. A mid-portion of one length section portion 22*e* extending down from bight 22*d* of each member 22*a* may be punched or otherwise formed with spaced apart through-openings 22*f* of circular shape which serve as scutcheons into which rack rail latching ends 22*c* are inserted for interlocking therewith as will hereinafter be more fully described and as is clear from Figs. 1, 3 and 4.

Said members 22*a* each may be of a length substantially the depth of carton 21 from inside corner to inside corner to provide a bracing structure if desired. Where carton 21 is made sturdy enough to withstand rough usage without such bracing structure, said members 22*a* may be made much shorter. For sturdily built corrugated paper strip cartons of thirty coat capacity having a rack bar thirty-six inches long extending from end wall to end wall across the entire width of a carton nineteen inches deep, anchoring members seven inches long have been found to give satisfactory service.

Rack rail 22*b* for simplicity may also be made of an elongated bent strip of sheet metal folded with bight 22*g* to have an inverted U-shape, said rack rail 22*b* terminating in a spaced apart double arrangement of said latching ends 22*c* which may be stamped or otherwise provided, as for example, formed as integral terminals of rack rail 22*b*. Latching ends 22*c* may include catches 22*j* having neck portions 22*h* adapted for swing-sliding interlockment with scutcheons 22*f*, as is clear from the

full and dot and dash line positions of the rack rail 22*b* in Figs. 4 and 5.

Catches 22*j* may each extend from neck portion 22*h* which together form a latching end 22*c*, end edge surfaces 22*k* of said catches 22*j* each extending in an upwardly and outwardly direction with respect to said rack rail bight 22*d*, that is, at an angle $\alpha$ (of about 15°) with respect to plane X—X passing through neck portions 22*h* and in the plane of member length section 22*e*, as shown in Fig. 4. Catches 22*j* may be made of an effective length greater than the diameter of escutcheon through-openings 22*f* so that rack rail 22*b* with catches 22*j* must be first given a tilting movement, that is, swung to the dot and dash line position for entering catches 22*j* into said escutcheon 22*f* and then a down-sliding movement into full line interlocking position shown in Figs. 4 and 5.

To permit giving said tilting movement, edge portions 22*m* of rack rail 22*b* extending between the up-facing ends of neck portions 22*h* and about bight 22*g* may be cut back to lie in a plane at an angle $\beta$ (of about 15°) with respect to plane X—X.

The utility of the invention will now be apparent. After providing said carton 21 formed with the open end 21*h* and down-turned reinforcing rim border encircling flap extension 21*c*, closure cover 21*a* having rim flange 21*e* adapted to be seated for snugly fitting over said flap extension 21*c*, a set of said knock-down type garment hanger racks 22 comprising two rim edge anchoring members 22*a* and rack rail 22*b*, said complete garment shipping carton 20 can be easily assembled by installing a garment hanger rack 22 as a demountable part of structure of carton 21 in the manner described above and shown in Figs. 1 and 2. Said assembly is simply accomplished by first applying one inverted U-shaped anchoring member 22*a* over carton open end rim edge fold 21*f* of said flap extension 21*c* on one carton side wall 21*b* to fully embrace the latter and underlying portion of carton side wall 21*b*, as is clear from Figs. 1 to 5. Then by inserting latching catches 22*j* through escutcheon openings 22*f* and swinging rack rail 22*b* by tilting from the indicated dot line to full line position with a down-sliding movement, as is clear from Fig. 4, one end of rack rail 22*b* is interlocked and firmly anchored in a rigid position with respect to carton 21. Latch end edge surface 22*k* will then be positioned to resiliently clamp compress the adjoining material forming the carton side wall 21*b* and flap extension 21*c* as at 21*g* just below said rim fold 21*f*.

Before finally interlocking rack rail 22*b* which is made in length to correspond to the inside width of carton 21 as above described, the other anchoring member 22*a* of the pair may first be interlockingly engaged to the oppositely provided latching end 22*c* of rack rail 22*b*, this last mentioned member 22*a* then being pressed down and fitted to a portion of the carton rim edge fold 21*f* in spaced opposite relation to carton side wall 21*b* on which the first mentioned member 22*a* is applied to align therewith so that edge surface 22*k* of the last mentioned catch 22*c* clampingly compresses the adjoining material forming carton side wall 21*b* and flap extension 21*c* in the same manner as has been described above and as is clear from Figs. 1 to 4.

The carton 21 and garment hanger rack 22 will now be assembled as shown in the lower part of Fig. 1 and as is clear from Figs. 2 to 4. Rack rail 22*b* is then made available as a support for garments carried by hangers 23, suspension hooks 23*a* thereof engaging the rack rail 22*b*, as is clear from Fig. 2. By applying closure cover 21*a* over the carton open end 21*h* and hanger rack 22 and seating said closure cover 21*a* in effective fitted position after suspending the garment contents on rack rail 22*b*, carton and garment hanger rack construction 20 with contents are then ready to withstand rough handling in shipment and during transportation.



Said closure cover 21*a* may be sealed, if desired, to carton 21 in said seated position in any well understood manner to prevent unauthorized opening or tampering with the garment contents.

Modified form of interlocking means for the hanger rack construction embodying the invention, as shown in Figs. 6 and 7, include a garment hanger rack 32 having a rack rail 32*b*. The latter may be provided with latching ends 32*c* including catches 32*j* extending from neck portion 32*h*.

Rack rail 32*b* may be made of an elongated bent strip of sheet material folded with a bight 32*g* to have an inverted U-shaped like rack rail 22*b* described above. Latching ends 32*c*, however, have the catches 32*j* positioned in a relatively inverted comparative relation to that shown and described above for said catches 22*j*. Catches 32*j* may have edge surfaces 32*k* thereof extending in a downwardly and inwardly direction with respect to rail rack bight 32*g*, that is, at an angle $\alpha$ (of about 15°) with respect to plane Y—Y passing through neck portions 32*h* and lying in the plane of member length sections 32*e*, as shown in Fig. 7. To permit giving the required tilting movement to rack rail 32*b* for interlocking the latter to anchoring members 32*a*, as indicated by the dot and dash and full line positions shown in Fig. 7, edge portion 32*m* of rack rail 32*b* extending between the down-facing ends of neck portion 32*h* and free edges of rail 32*b* may be cut back to lie in a plane at an angle $\Delta$ (of about 30°) with respect to plane Y—Y.

Anchor member 32*a* may be made like members 22*a* with escutcheons 22*f* described above, or as an alternative through opening escutcheons 32*f* of elongated slots may be substituted as shown in Fig. 6, said anchor members 32*a* being made of an elongated bent strip of sheet material folded with a bight 32*d* to have the inverted U-shaped section sized and shaped to embraceably be fitted on the carton open end rim border extension 21*c*.

Hanger rack 32 may be assembled, installed and utilized in carton 21 in the same manner as described above for hanger rack 22 except the necessary interlocking movement of anchoring members 32*a* with rack rail 32*b* must be accomplished by movement described above and as indicated in Fig. 7.

Since the rack rails in use when practicing the invention are subjected to relatively severe stress and strain and in order to manufacture the same at a minimum cost of labor and material, it is contemplated not only to employ rack rails of U-shaped cross section like rack rails 22*b* and 32*b*, but also those of a lighter weight stock formed with reinforcing portions. To that end, as shown in Figs. 8, 9 and 10, there may be provided rack rails 42*b* of U-shaped cross section made of strip sheet material and formed with longitudinally extending interiorly folded edge flanges 42*n*, or rack rail 52*b* formed with longitudinally extending out-turned edge beads 52*n*, or rack rail 62*b* formed with corrugations 62*n* longitudinally extending along the border edges thereof.

Other sectional forms of rack rails, as shown in Figs. 11 to 13, as for example, tubular-shaped rack rail 72*b* which may be made from a suitably sized and shaped tube or pipe length, also as shown in Fig. 11 of tubular shape formed with longitudinally extending reinforcing beaded edge seam 72*n*. In Figs. 12 and 13, standard or special extruded sectional stock of aluminum or like metal are shown, rail section 82*b* shown in Fig. 12 being provided with thickened longitudinally extending reinforced edge portion 82*n*, and rail section 92*b* shown in Fig. 13 being of the conventional angle section which is available commercially in iron, steel, aluminum and may be made of other cheap materials.

Rack rails made of strips or bars shown in Figs. 8 to 13, inclusive, may be cut and finished with double latching ends in the same manner as described for latching ends 22*c* or 32*c* for use with anchoring members 22*a* or 32*a* having scutcheon openings 22*f* or 32*f*, respectively.

In Fig. 14, there is shown a rack rail **100***b* formed of T-section stock, a flat side **100***q* serving as a bracing reinforcement and intermediate rib **100***r* terminating in a single latching end **100***c* having angularly positioned catches **100***j* each formed for example like that shown in Fig. 4 with a neck portion **100***h*, end edge surface **100***k* extending at angle $\alpha$ with respect to plane X—X and rib edge portion **100***m* extending at angle $\beta$ with respect thereto. Since rack rail **100***b* has but a single catch **100***j* at each end, only one scutcheon opening will be required to interlock with each anchoring member in the same manner as described for rack construction **22**.

It is thus seen that there is provided improved shipping carton and readily installable garment hanger rack constructions whereby the several objects of this invention are achieved and which are well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matters herein set forth or shown in the accompanying drawing are to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In combination, a cardboard shipping carton having an open end and an edge border flap extension downturned to provide a rim fold extending about said carton open end, and a three-piece garment hanger rack comprising two anchoring members interconnected with a rack rail incorporated in the carton open end structure, said anchoring members being of inverted U-shaped cross section corresponding in contour to said flap extension and rim fold formation and having inner and outer walls interconnected by bight portions, said anchoring members being mounted in spaced apart relation a distance equal to the effective length of said rack rail to embrace spaced apart portions of said edge flap extension and rim fold, a latch coupling provided by a through-opening in a mid-length section of the inner walls of each anchoring member engaging with a catch having an end edge surface terminating each end of the rack rail to serve as the interconnection of the anchoring members with the rack rail, said end edge surface and anchoring member outer wall resiliently clamp compressing therebetween portions of the carton material embraced by the anchoring means below said rim fold.

2. In combination with a cardboard shipping carton having an open end and an edge flap extension downturned to provide a rim-fold extending about said carton open end, a detachable garment hanger rack including a rack rail extending across said carton open end, anchoring members removably mounted on a pair of opposite sides of said carton to embrace said edge flap extension and rim-fold, said anchoring members being substantially of inverted U-shape in cross section forming inner and outer walls interconnected by bight portions extending over said carton rim-fold, and latch couplings for releasably interlocking opposite ends of said rack rail with openings formed in the inner walls of said anchoring members, each of said latch couplings being formed with a catch extending through one of said openings and having an end edge surface made effective on installation of said hanger rack in the carton to resiliently clamp compress portions of the carton material in the region of said edge flap between said latch coupling end edge surface and said outer wall of the anchoring member below said bight.

3. The combination defined in claim 2 in which said



catches are positioned with the edge surfaces extending in an angular relation of less than 90° with respect to a plane of said openings, and said rack rail being cut away in another angular relation with respect to said plane to permit tilting movement thereof for inserting and interlocking one of said catches projected into said opening.

4. The combination defined in claim 2 in which said rack rail is formed of a T-shaped section having a single catch at each end thereof, and a rib formation extending the entire effective length thereof.

5. In combination with a cardboard shipping carton having an open end and a knock-down type of garment hanger rack installed within said carton open end as defined in claim 2 in which said rack rail is of inverted U-shape having integral reinforcing formations extending lengthwise opposite edges thereof.

6. In combination a cardboard shipping carton having an open end and a knock-down type of garment hanger rack installed within said carton open end as defined in claim 2 in which said rack rail is a tubular structure.

7. A hanger rack for installation into an open ended garment shipping carton comprising a three-piece construction, two anchoring members interconnecting with a rack rail, said anchoring members being formed with inner and outer walls interconnected by bight portions for removably mounting on a rim border edge portion of said open ended carton, said inner walls being formed with openings along a mid-length thereof, said rack rail having latching opposite ends each formed with a catch projecting into said opening to interlock and couple said anchoring members with opposite ends of the rack rail, and an edge surface extending from each catch towards said outer wall positioned to releasably clamp compress therebetween portions of said carton rim border edge on which said anchoring members are mounted.

8. A hanger rack as defined in claim 7 in which said catches extend with said edge surfaces thereof in an angular relation of less than 90° with respect to a plane of said opening, said rack rail being cut away in another angular relation with respect to said plane to permit tilting movement thereof for inserting and interlockingly coupling the catch projected into said opening.

9. A hanger rack as defined in claim 7 in which said rack rail is of inverted U-shape having integral reinforcing formations extending lengthwise opposite edges thereof.

10. A hanger rack as defined in claim 7 in which said rack rail is formed of a tubular structure.

11. A hanger rack as defined in claim 7 in which said rack rail is formed of a T-shaped section having a single catch at each end thereof and a rib formation extending the entire effective length thereof in angular relation to a plane of said catch.


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