Jan. 27, 1959 V. LA BONIA ET AL 2,870,916

COMBINED SHELF AND HANGER MEANS AND IMPROVED SUPPORT THEREFOR

Filed June 5, 1956

2 Sheets-Sheet 1

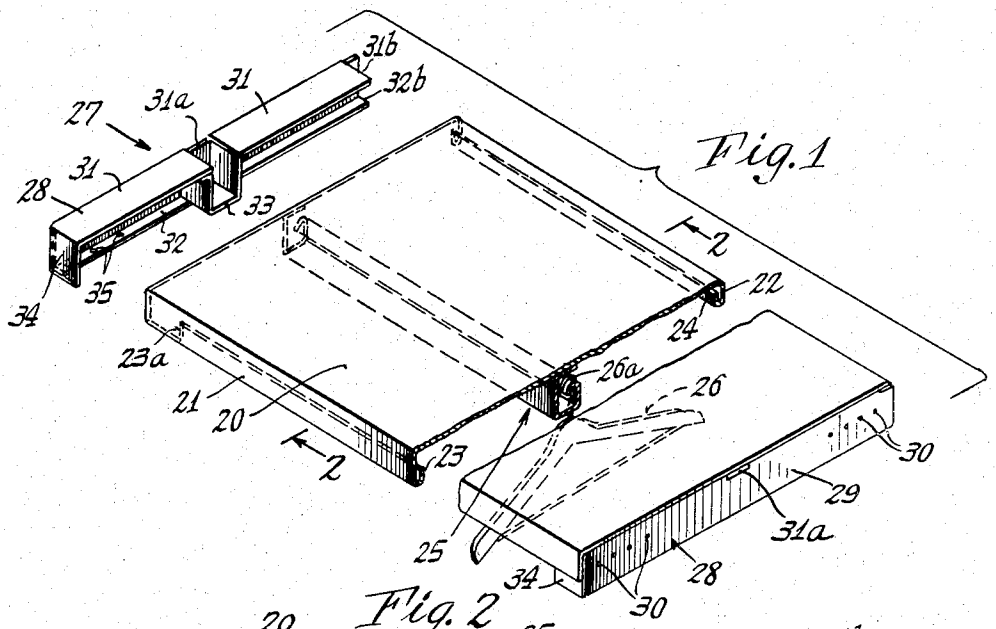

Fig. 1

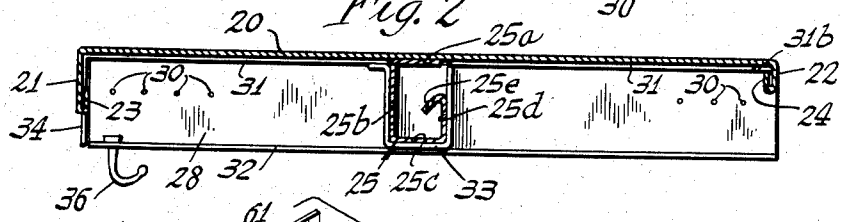

Fig. 2

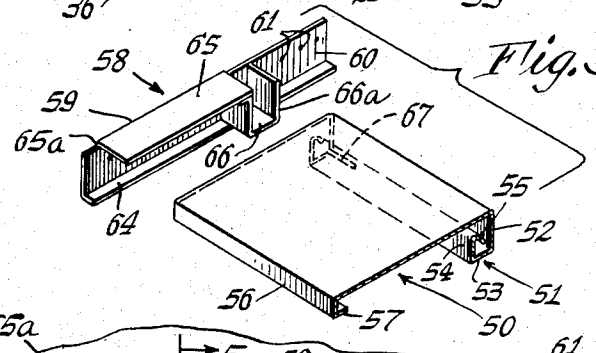

Fig. 3

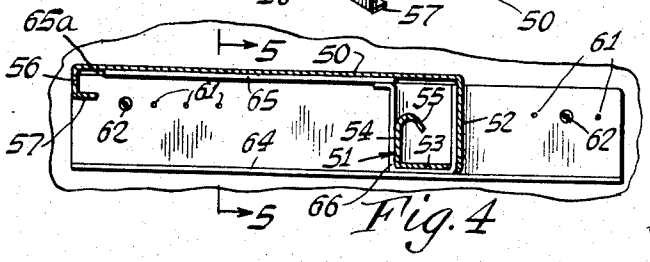

Fig. 4

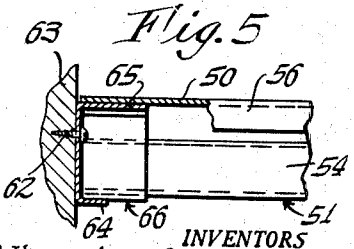

Fig. 5

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Fig. 6

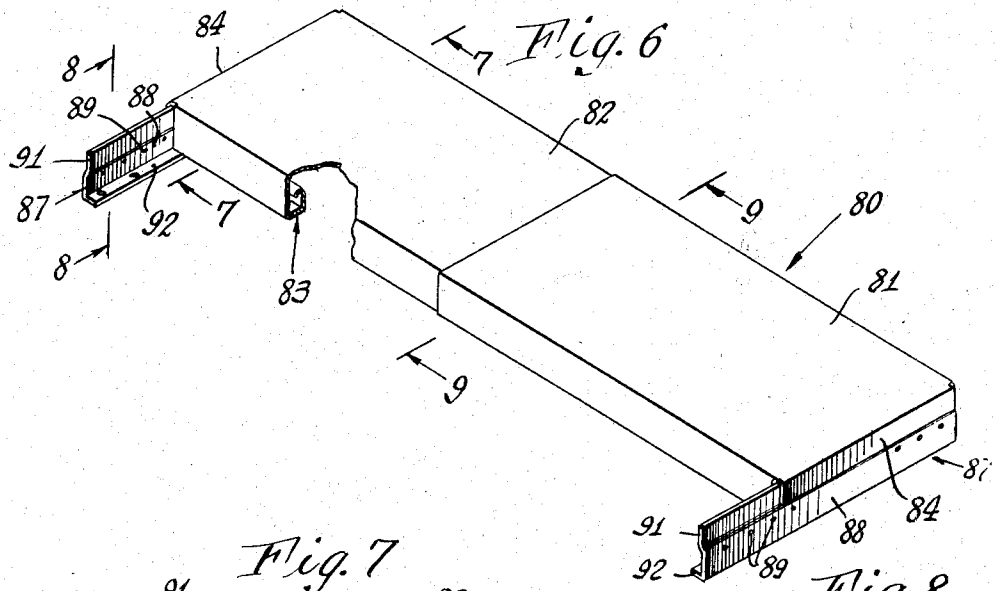


Fig. 7

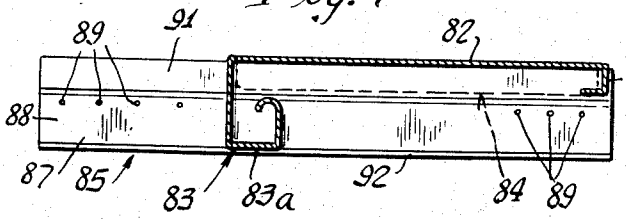


Fig. 8

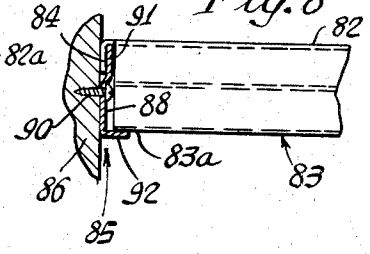
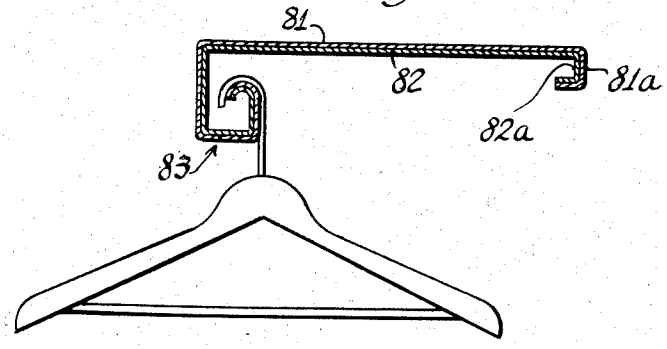


Fig. 9



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COMBINED SHELF AND HANGER MEANS AND IMPROVED SUPPORT THEREFOR

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14 Claims. (Cl. 211—90)

This invention relates to an improved shelf construction and more specifically to a combined shelf and hanger means and improved supporting means for removably and rigidly supporting the combined shelf structure to suitable supporting surfaces.

Heretofore, shelves having dependingly connected clotheshangers were directly secured to a supporting surface, and as a result, had the disadvantage of not being readily removable therefrom as for cleaning, storing or the like.

Another disadvantage common to a combined shelving and hanging means heretofore known was that the clothes hanging portion of the shelf depended below the mounting portion and was simply suspended in space. As a result, the load capacity of the hanging means of the prior construction was greatly reduced, the capacity load capable of being carried thereby being limited solely to the ability of the suspended hanger means to resist the turning moment of the same about its point of connection to the shelf when a load was applied thereto as by supporting a plurality of weight hangers thereon. For this reason the clothes hanging portion of the shelf of prior constructions was readily susceptible to deformation and damage when excessive loads were applied thereto.

An object of this invention is to provide an improved shelving construction whereby a combined shelf and hanger means is supported on a suitable supporting surface by novel brackets so that the combined shelf construction is rendered readily removable without the use of any tool of any kind.

Another object of this invention is to provide a combined shelf and hanger means having improved supporting brackets therefor provided with means for supporting the hanger means so as to resist deformation thereof in the event excessive loads are applied to the hanger means.

Another object of this invention is to provide a removably supported combined shelf and hanging means and improved supports therefor, each of which is provided with cooperating means to prevent relative transverse movement therebetween.

The above objects are accomplished by a shelf having a depending hanging means substantially coextensive therewith which is adapted to be supported on a suitable supporting surface by a novel supporting means. According to this invention the supporting means includes a pair of elongate brackets, each of which is provided with a mounting portion having thereon means for supporting the shelf and means for resisting deformation of the hanging means of the combined shelf construction. The combined shelf construction and supporting brackets are so mated that the shelf is rendered readily removable without the use of any tools which is readily accomplished by simply displacing the combined shelf and hanger construction vertically off its supports. To prevent relative transverse movement between the combined shelf and brackets so as to insure against accidental dislodgement of the same in assembled position, the combined shelf

and brackets in several forms of the invention illustrated are further provided with cooperating means to resist such movement. If desired, the combined shelf construction of this invention may be rendered adjustable by telescopically nesting a pair of complementary shelving sections so that the latter are adapted to be extended between their minimum and maximum limits.

A feature of this invention resides in the provision that the improved combined shelf of this invention is relatively simple in construction, inexpensive to manufacture and positive in operation.

Another feature of this invention resides in the provision that the components of the improved combined shelf construction are formed of sheet metal parts which are easily fabricated as by blanking and stamping.

Other features and advantages will hereinafter be apparent from the specifications and claims when considered with the drawings in which:

Figure 1 is a partially exploded, fragmentary perspective view of an improved combined shelf and hanger construction according to this invention.

Fig. 2 is a sectional view taken along line 2—2 of Fig. 1.

Fig. 3 is an exploded, perspective view of a modified form of the invention.

Fig. 4 is a detail sectional side view of the modified form illustrated in Fig. 3 in assembled position.

Fig. 5 is a sectional view taken along line 5—5 of Fig. 4.

Fig. 6 is a detail perspective view having a portion thereof broken away illustrating still another modification of this invention.

Fig. 7 is a sectional view taken along line 7—7 of Fig. 6.

Fig. 8 is a detail sectional view taken along line 8—8 of Fig. 6.

Fig. 9 is a sectional view taken along line 9—9 of Fig. 6.

Referring to Figs. 1 and 2, there is illustrated according to this invention an improved shelving construction comprising a panel forming a shelf **20**. As shown, the shelf **20** is constructed of a relatively thin gauge material of sheet metal or the like having formed integral therewith along the longitudinal edge portions thereof depending flanges **21** and **22** the depending flange **21** along the front portion of the shelf being somewhat longer than the flange **22** of the rear portion. To stiffen the shelf structure the front and rear flanges are provided with a reversely bent portion **23**, **24** respectively to form a stiffening bead.

Intermediate the longitudinal edge portions of the shelf and substantially coextensive therewith, there is connected to the undersurface thereof a hanger means **25**. As illustrated, the hanger means comprises a J-shaped channel member. More specifically, the hanger means comprises a mounting portion **25***a* having a depending flange **25***b* connected to a second portion **25***c* extending substantially perpendicular thereto. A reversely bent portion **25***d* is connected to the second portion **25***c* extending substantially perpendicular thereto, the reversely bent portion **25***d* terminating in an inwardly and downwardly bent lip **25***e* spaced from the undersurface of the panel to provide the means for receiving and supporting the hook **26***a* of a garment hanger **26**. Thus, the channel member described functions as a hanger means for supporting a plurality of weighted garment hangers, while at the same time aiding in stiffening the intermediate portion of the shelf.

In order that the shelving constructions, according to this invention, may be removably supported on a suitable supporting surface, an improved supporting means **27** is utilized in conjunction with the shelving structure described. According to this invention, the combined shelf and hanger means is arranged to be readily removed from its support means so that a housewife may remove the same simply, quickly and easily without utilization of any

tools. The support means, in addition to rendering the combined shelf readily removable, is further provided with means which tend to resist deformation or turning moment of the hanger means 25 about its point of connection to the shelf 20 when an excessive load is applied thereto.

According to this invention, the movable support means includes a pair of brackets 28 which are adapted to be mounted to a suitable supporting surface. As illustrated, each bracket 28 is provided with a mounting portion 29 which extends substantially the width of the shelf and is provided with a plurality of apertures 30 for receiving suitable fasteners, such as screws or the like, by which it is rigidly secured to a suitable supporting surface. Extending inwardly along the upper and lower edges of the mounting portion 29, the bracket is provided with spaced upper and lower flanges 31 and 32 respectively.

As illustrated in Fig. 1, the upper flange 31 is provided with a cut-out portion 31*a* intermediate the ends thereof. In alignment with the cut-out portion 31*a* and disposed between the upper and lower flanges is a U-shaped member 33 forming a recess or socket for receiving the end portion of the hanger means 25 as will be described. If desired, the forward end of the upper flange 31 may be provided with a downwardly bent web portion 34 and the lower flange 32 with a plurality of apertures 35 for removably receiving therein a garment hook 36 as illustrated in Fig. 2.

According to this invention, the combined shelf 20 and hanger means 25 may be removably supported on the bracket members 28. This is accomplished simply by supporting the outer ends of the shelf 20 upon the upper flange 31 of the bracket 28, the depending hanger means 25 being adapted to be received and seated in a recess formed by the U-shaped channel 33 of the bracket so as to be firmly supported therein.

To facilitate the positioning of the combined shelf and hanger structure on its supporting brackets, the rear ends of the upper and lower flanges respectively are provided with a cut-out portion 31*b* and 32*b* to facilitate the receiving of the beaded portion of the depending rear flange 22, and the end portion 23*a* of the bead 23 on the forward flange is cut away to accommodate the web 34 of the bracket. Therefore, according to this construction, the depending flanges 21 and 22 of the shelf cooperate with the web 34 and cut-out portion 31*b* of the upper flange to prevent relative transverse movement between the shelf 20 and the bracket 28 in the assembled position.

With the combined shelf and hanger means firmly supported on the brackets, as illustrated in Fig. 2, it will be noted that the U-shaped channel 33 embraces the end portion of the hanger means 25 so as to resist turning moment of the hanger means about its connection to the shelf 20 under excessive load. As a result of the construction described, the hanger means 25 is able to support a greater load than that of the prior known comparable shelves constructed of similar gauge material. For removing the shelf 20 it is simply necessary to displace or lift the shelf vertically an amount sufficient to free the hanging means from its recess on supporting brackets. Thus a housewife can simply remove the combined shelf and hanger at will effortlessly, and simply whenever desired.

While the shelf illustrated by Figs. 1 and 2 may be commonly considered to be a full shelf, the form of the invention illustrated in Figs. 3–5 is directed to what may be referred to as a half shelf. In this form of the invention a panel forming the shelf 50 has a width substantially less or approximately one-half that of the full shelf illustrated in Fig. 1.

As illustrated in Fig. 3, the hanger means 51 in this form of the invention is formed integral with the shelf 50. As shown, the hanger means 51 is formed along the front longitudinal edge portion of the shelf by an integrally depending flange 52 having a portion 53 bent inwardly at substantially right angle so as to be spaced from the undersurface of the shelf and having a reversely bent portion 54 formed therewith terminating in a downward lip 55 spaced from the undersurface of the shelf to provide means for supporting a plurality of garment hangers thereon. If desired, the rear longitudinal edge portion as illustrated is provided with a downwardly turned flange 56 terminating in an inwardly turned portion 57 substantially perpendicular thereto. Consequently, it will be noted that in this form of the invention the longitudinal edge portion forming the hanger means 51 and the terminating flange 56 opposite thereof provides sufficient means by which the panel may be stiffened.

The support means 58 for removably supporting the half shelf section of this form of the invention is modified to comprise a pair of brackets 59, each of which is provided with an elongate mounting portion 60 which is substantially wider than the width of the shelf 50, the mounting portion 60 being provided with apertures 61 for receiving suitable fasteners 62 by which it may be secured to a suitable supporting surface 63. In this form of the invention the elongate mounting portion 60 is provided with a lower flange 64 which is substantially coextensive therewith and an upper flange 65 substantially equal to the width of the shelf 50 which is adapted to be supported thereon. Connected to the forward end of the upper flange 65 there is provided a U-shaped channel 66 having its opened end adjacent the forward end of upper flange. Therefore, according to this form of the invention, the half shelf 50 structure is removably supported on the bracket 59 by resting the end portions of the shelf on the upper flange and positioning the end portion of the hanger means 51 in the recess or socket formed by the U-shaped member 66 adjacent the end of the upper flange.

In order to facilitate positioning of the shelf 50 on the bracket 59 and also to provide means to prevent transverse movement therebetween, the hanger portion 51 is provided with a slot 67 adjacent the depending flange 52 and perpendicular portion 53 connected thereto for receiving the forward leg 66*a* of the U-shaped member. Also the rear portion 65*a* of the upper flange is cut away to provide clearance for the flange 57 along rear longitudinal edge of the shelf. Therefore, in this form of the invention, as in the form illustrated in Figs. 1 and 2, the U-shaped member 66 supporting the end portions of the hanger means 51 tend to resist turning movement of the hanger means about the junction connecting the same with the shelf when a load is applied thereto. Further, it will be noted that by providing the hanger 51 with the slot 67 relative transverse movement between the shelf 50 and its brackets 59 in the assembled position is substantially eliminated. Therefore, in this form of the invention, as in the one previously described, a shelf 50 is removably and rigidly supported on its bracket 59 so that it may be readily removed simply by displacing the shelf vertically in the manner hereinbefore described.

Referring to Figs. 6–9, there is illustrated still another form of the invention. In this form of the invention the combined shelf and hanger means 80 comprises a pair of slidably nested complementary sections 81 and 82 which are adapted to be telescopically adjusted between a minimum and maximum range. While either of the forms illustrated in Figs. 1 and 3 may be likewise rendered adjustable, the particular form of the invention of Fig. 6 is directed to a half-shelf construction.

Accordingly, the hanger means 83 of each section is formed integral therewith along the forward longitudinal edge in a manner hereinbefore described, the hanger means of one section being adapted to be slidably received within the hanger means of its complementary section. Also along the rear longitudinal edge, each section 81, 82 is provided with cooperating complementary, inwardly turned depending flange portions 81*a*, 82*a*. Thus

the hanger means and rear flanges of one section form the rail means for slidably receiving the cooperating portions of its complementary section. While only two such sections are illustrated, it will be understood that more than two sections may be so telescopically connected together.

In this form of the invention, it will be noted that the outer end portions of the adjustable shelf are provided with a depending flange **84** which extends slightly beyond the end portion of the hanger means **83** and rear flanges **81***a*, **82***a*.

The supporting means **85** by which the adjustable shelf illustrated is supported to a suitable supporting surface **86** comprises an elongate bracket **87** substantially longer than the width of the shelf **80** comprising a mounting portion **88** provided with apertures **89** for receiving suitable fastening means **90**. The upper portion **91** of the bracket is provided with a laterally offset portion spaced from the supporting surface **86** as shown in Fig. 8. Extending along the lower marginal portion of the bracket there is provided an inturned flange **92**. Thus, as illustrated in Figs. 7 and 8, the shelf of this form of the invention is removably supported on the brackets by simply positioning the end flanges **84** in the space formed between the laterally offset portion **91** of the bracket and the supporting wall **86**, the end portion of the hanging means **83** adapted to be supported on the flange **92** of the bracket. Consequently, the flange **92** supports the bottom portion **83***a* of the hanging means which tends to resist the turning movement of the hanger **83** when a weight is applied thereto, thereby preventing deformation of the same when an excessive load is applied thereto.

In this form of the invention, as in the forms previously described, the shelf **80** is rendered readily removable simply by lifting the shelf vertically so as to free the end flanges **84** from the upper end of the brackets. It will be noted in this form that the combined shelf and hanger means **80** may be readily moved transversely along the bracket members so that it may be positioned transversely thereof as desired.

The combined shelving, hanger and supports herein described is relatively simple in construction consisting of relatively very few, simply and easily fabricated parts and arranged so that the shelf can be readily removed for purposes of cleaning or storing without the use of any tools, and furthermore the novel bracket means cooperate with the combined shelving and hanger means to resist the tendency of the hanging means from turning about its point of connection to the shelf when a load is applied thereto. Further, it will be noted that in each form the supporting flanges of the brackets are provided with apertures for removably receiving auxiliary garment hooks such as **36**.

Variations and modifications may be made within the scope of the claims and portions of the improvements may be used without others.

We claim:

1. A combination shelving and hanger means and support therefor comprising a shelf, hanging means dependingly connected to said shelf and extending longitudinally of said shelf for supporting garment hangers, and supporting means for supporting said shelf and hanging means between suitable planar supporting surfaces disposed at and perpendicular to the ends of said shelves, said supporting means including a pair of elongate bracket members having a mounting portion extending for the full length thereof and adapted to be connected to said supporting surfaces and having means to support said shelf thereon, said brackets having a member projecting from the face of the mounting portion and forming a means extending under said hanging means for supporting said hanging means depending from said shelf to prevent deformation of the same when a load is applied thereto by hanging a number of garments thereon.

2. A combination shelving and hanger means for garments and the like and support therefor comprising a sheet metal shelf having the longitudinal edge portions terminating in depending flanges, said flanges being inwardly bent to stiffen said shelf, hanging means dependingly connected to said shelf and extending longitudinally of said shelf for supporting garment hangers, and supporting means for removably supporting said shelf and hanging means between suitable planar supporting surfaces disposed at and perpendicular to the ends of said shelves, said supporting means including a pair of elongate bracket members having a mounting portion extending for the full length thereof and adapted to be connected to said surfaces to support said shelf thereon, said brackets having a member projecting from the face of the mounting portion and forming a means for receiving and supporting said hanging means connected to said shelf to prevent deformation of said hanging means when a load is applied thereto by hanging a number of garments thereon.

3. The invention as defined in claim 2 wherein said depending flanges of said shelf overhang said brackets and cooperate therewith to prevent relative transverse movement between said brackets and shelf.

4. A combination shelving and hanger means for garments and the like and support therefor comprising a sheet metal shelf, hanging means connected to said shelf, said hanging means including a J-shaped channel member depending from said shelf and extending longitudinally thereof for supporting garment hangers thereon, and supporting means for removably supporting said shelf and hanging means between suitable planar supporting surfaces disposed at and perpendicular to the ends of said shelves, said supporting means including a pair of elongate bracket members having a mounting portion extending for the full length thereof and adapted to be connected to said surfaces to support the end portions of said shelf, said brackets having a member projecting from the face of the mounting portion and forming a means for receiving and supporting the bottom of said J-shaped channel member connected to said shelf to prevent deformation of said J-shaped channel member when a load is applied thereto by hanging a number of garments thereon.

5. A combination shelving and hanger means and a support therefor comprising a sheet metal shelf, hanging means connected to said shelf for supporting a plurality of garment hangers thereon, said hanging means comprising a depending portion connected to said shelf extending longitudinally thereof, a second portion bent at substantially right angles to said depending portion so as to be spaced from said shelf and substantially parallel thereto, and a return bent portion connected to said second portion, said return bent portion being spaced from the bottom of said shelf upon which said garment hangers are supported, and support means for supporting said shelf and hanger means between suitable planar supporting surfaces disposed at and perpendicular to the ends of said shelves, said supporting means including a pair of elongate brackets having a mounting portion extending for the full length thereof and adapted to be connected to said surfaces to support the end portion of said shelf, said brackets having means forming a socket on the mounting portion for receiving and supporting said hanging means, said socket confining said depending portion and return bent portion so as to prevent deformation of said hanging means when a load is applied thereto as by hanging a number of weighted garment hangers thereon.

6. A combination shelving-hanging means and support therefore comprising a shelf, hanging means dependingly connected to said shelf and extending longitudinally of said shelf for supporting a plurality of garment hangers, said hanging means consisting of a J-shaped channel member, and supporting means for supporting

said shelf and hanging means between suitable planar supporting surfaces disposed at and perpendicular to the ends of said shelves, said supporting means including a pair of brackets, each bracket including an elongated mounting portion adapted to be secured to said surface and having an inturned upper and lower flange and a U-shaped member connected to said bracket and forming a socket disposed between said upper and lower flanges, said U-shaped member having its open end juxtaposed said upper flange, said shelf being adapted to be supported on said upper flange of said bracket, and said depending hanging means being receivable in said socket whereby said socket supports said hanging means to prevent deformation of said hanging means when a load is applied thereto as by hanging a number of garments thereon.

7. The invention as defined in claim 6 wherein said hanging means is dependingly disposed intermediate the edge portion of said shelf and said open end of said member forming said socket for receiving and supporting said hanging means is disposed intermediate the ends of said upper flange of said brackets.

8. The invention as defined in claim 6 wherein said hanging means is dependingly connected to an edge portion of said shelf and said open end of said U-shaped member forming said socket for receiving and supporting said hanging means is adjacent an end portion of said upper flange of said bracket.

9. A combination shelving and hanger means and a support therefor comprising a sheet metal shelf; hanging means connected to said shelf for supporting a plurality of garment hangers thereon, said hanging means comprising a depending flange portion of said shelf and extending continuously therealong, a second portion bent inwardly at substantially right angles to said depending flange portion so as to be spaced from said shelf and substantially parallel thereto, the junction of said depending flange and second portion adjacent the end of said hanging means being provided with a slot, and a return bent portion connected to said second portion, said return bent portion being spaced from the bottom of said shelf for removably receiving said hangers and support means for supporting said shelf and hanger means on a planar supporting surface disposed at and perpendicular to the ends of said shelves, said supporting means including a pair of elongate brackets having a mounting portion adapted to be connected to said surface to support the end portion of said shelf, said brackets having a U-shaped channel member connected to said mounting portion and forming a socket for receiving and supporting said hanging means, said socket confining the ends of the depending flange portion and return bent portion so as to prevent deformation of said hanging means when a load is applied thereto by hanging a number of weighted garment hangers thereon, said U-shaped channel member having a leg portion thereof adapted to be received in said slot in the shelf to cooperate therewith to prevent relative movement between said shelf and brackets.

10. The invention as defined in claim 9, wherein said bracket is provided with an inturned flange adjacent the open end of said U-shaped member for supporting said shelf.

11. An improved bracket for supporting a shelf having a contiguously connected depending hanging means comprising an elongate mounting portion adapted to be secured to a suitable planar supporting surface, said mounting portion having an upper end portion to extend under and support said shelf and an inturned flange spaced therefrom a distance equal to said depending hanging means and upon which is rested the end portion of said hanging means to support the same so as to prevent deformation of the hanging means when a load is applied thereto as by hanging a plurality of weighted garment hangers thereon.

12. The invention as defined in claim 11 wherein said inturned flange is provided with an aperture for removably receiving a hook.

13. An improved bracket for removably supporting a shelf having a contiguous depending hanging means connected thereto comprising an elongate mounting portion extending substantially the width of said shelf and adapted to be secured to a suitable supporting surface, said mounting portion having an upper inturned flange having a cut-out portion intermediate the ends thereof and a lower inturned flange spaced therefrom, a U-shaped channel member disposed between said flanges and connected to said upper flange so that the open end of said channel is aligned with said cut-out portion of said upper flange for receiving and supporting said depending hanging means as the shelf is supported upon said upper flange, said channel member supporting said hanging means so as to prevent deformation thereof when a load is applied thereto.

14. An improved bracket for supporting a shelf having a contiguous hanger means dependingly connected thereto comprising an elongate mounting portion adapted to be supported on a suitable planar supporting surface disposed at and perpendicular to the ends of said shelves and being substantially longer than the width of the shelf supported thereon, said mounting portion having spaced upper and lower flanges extending substantially perpendicular thereto, said upper flange approximating the width of said shelf, and a U-shaped channel member secured to the mounting portion to project therefrom having its open end adjacent one end of said upper flange and forming a socket for receiving and supporting the end of the depending hanger means as the shelf is supported on said upper flange, said channel member preventing deformation of said hanger when a load is applied thereto.

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