Sept. 12, 1961 S. W. JENTZEN 2,999,599

DISPLAY SHELVING

Filed Sept. 2, 1958 2 Sheets-Sheet 1

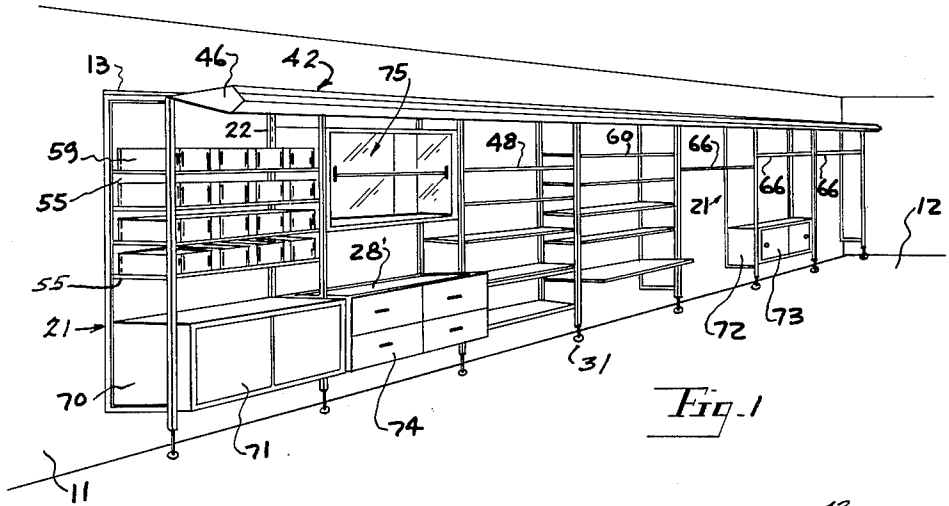


Fig. 1

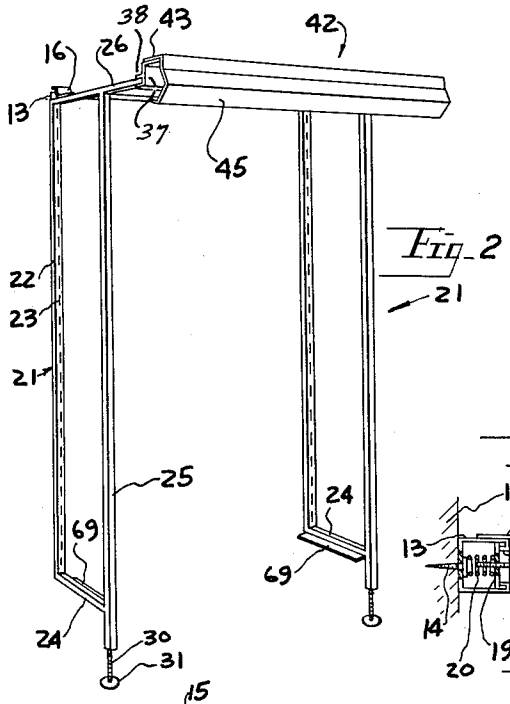


Fig. 2

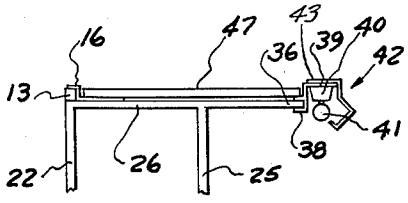


Fig. 6

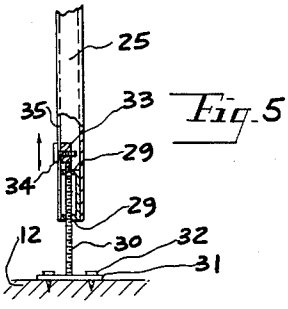


Fig. 5

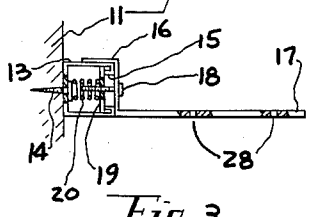


Fig. 4

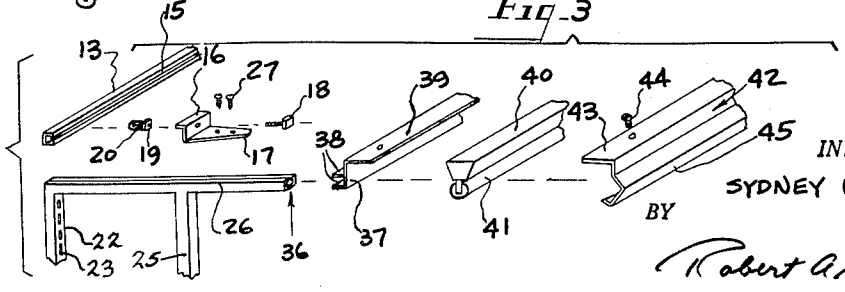


Fig. 3

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DISPLAY SHELVING

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Fig. 7

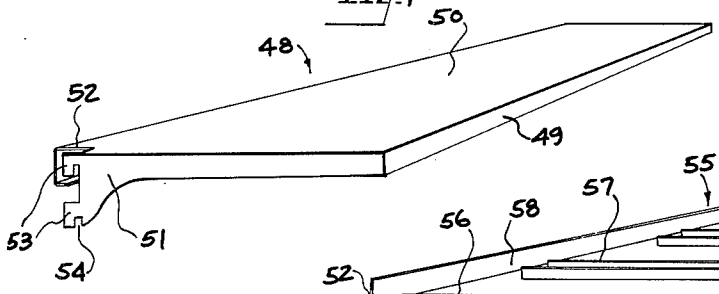


Fig. 8

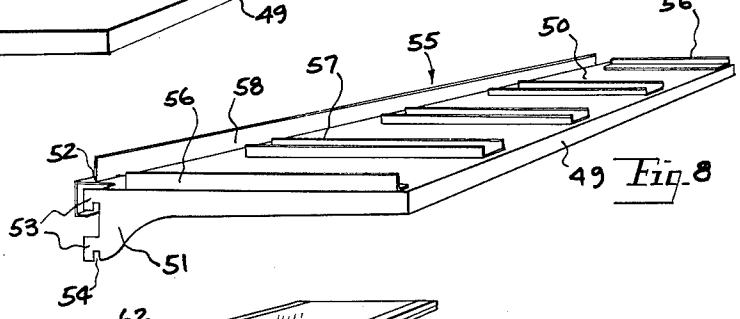


Fig. 9

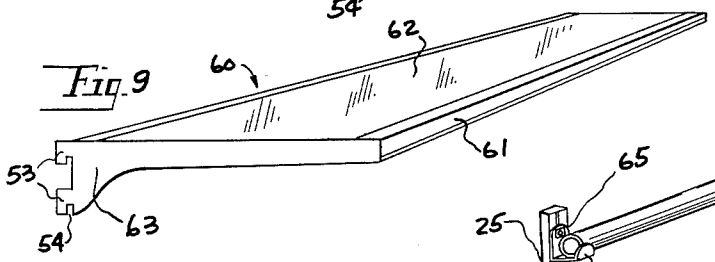


Fig. 10

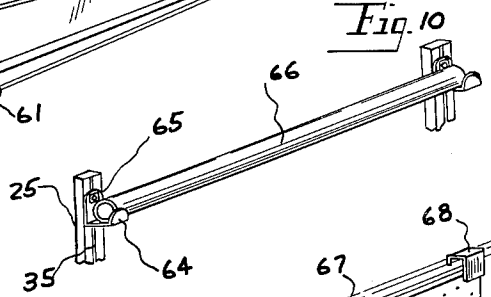


Fig. 11

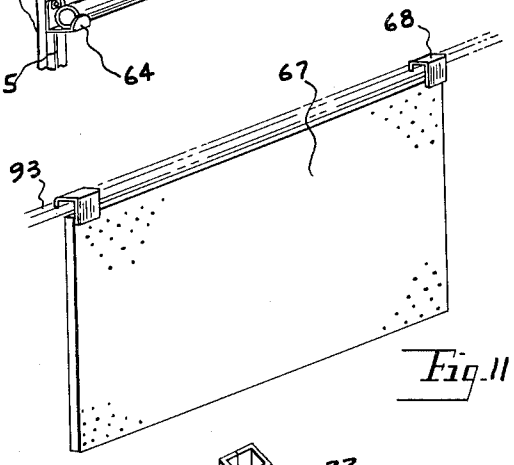


Fig. 13

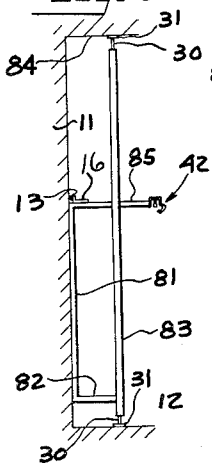


Fig. 14

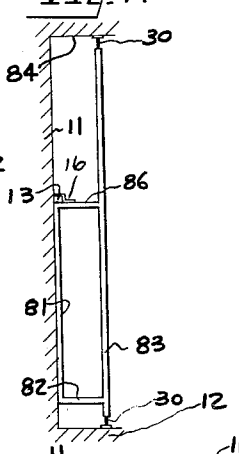


Fig. 15

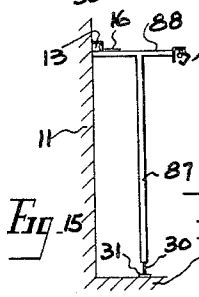


Fig. 16

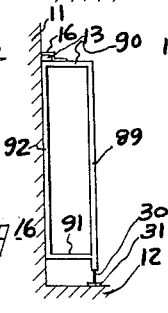


Fig. 17

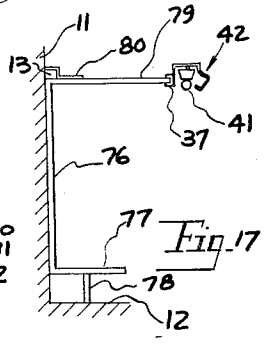
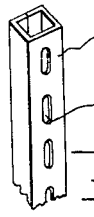


Fig. 12



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2,999,599

DISPLAY SHELVING

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Filed Sept. 2, 1958, Ser. No. 758,194
9 Claims. (Cl. 211—90)

This invention relates to the merchandising of goods in stores and more particularly to display equipment mountable on a floor and along a wall.

It is the object of the present invention to provide a completely new system of display equipment wherein the assembled display may be easily changed to meet every merchandising need with a minimum of effort.

It is the object of the present invention to provide a unitized component section of the strut system whereby various displays may be formed including display shelves, hang rods, showcases and storage cabinets, all of which are interchangeable as to location, and all of which or part, may be combined to form a complete store display.

It is another object of the present invention to provide a display system including a series of unitized component sections or struts which have the ultimate in rigidity, strength and style, providing display modules, and wherein multiples of this module may be employed to provide the desired length of display.

It is another object to include the use of a forwardly extending longitudinal light shielding canopy across the top thereof, or upper portions thereof, to thereby integrate the various display departments and to provide for proper illumination of the entire display, and in such manner as to accent the merchandise displayed with the display system itself inconspicuous.

The present adjustable strut modules as a system enables the user to vary the display space allocated to particular goods such as for special sales, seasonal promotions, or as styling changes may require.

It is a further object to provide display equipment for stores which is self-supporting and may be installed along the bare walls, and with the simplicity of the adjustable struts conducive to complete installation in a short period, and wherein the assembled modules are flexible as to arrangement within the imagination of the store manager.

It is still a further object of the present invention to provide within the upright struts a series of vertically spaced apertures adapted to cooperatively receive the notched supporting fingers of the removable and interchangeable shelving and wherein said fingers and the associated bracket form an integral part of the shelf and its frame.

These and other objects will be seen from the following specification, claims and drawings in which:

FIG. 1 is a perspective view of one assembly of the present display equipment.

FIG. 2 is a fragmentary perspective view of one section thereof, on an enlarged scale.

FIG. 3 is an exploded diagrammatic view illustrating the relationship and assembly of the uppermost level of the respective parts shown in FIG. 2.

FIG. 4 is a fragmentary side elevational view on an enlarged scale illustrating the mounting of the top horizontal anchor channel and associated bracket to a wall.

FIG. 5 is a fragmentary partially sectioned view of the lower end of a strut support.

FIG. 6 is a fragmentary side elevational view illustrating on an enlarged scale, the assembly of the upper portions of the display shown in FIG. 2.

FIG. 7 is an enlarged perspective view of one form of shelving.

FIG. 8 is a similar view of another form of shelving.

FIG. 9 is a similar view of another form of shelving.

FIG. 10 is a fragmentary perspective view from the interior of the display FIG. 1, illustrating the mounting of a hang rod.

FIG. 11 is a perspective view of a back display panel adapted for mounting within the display of FIG. 1.

FIG. 12 is a fragmentary perspective view on an enlarged scale of a portion of the upright tubular body of the strut.

FIG. 13 is a fragmentary elevational view of a slight variation of strut construction.

FIG. 14 is a similar view of another variation.

FIG. 15 is a fragmentary side elevational view of another variation of strut assembly.

FIGS. 16 and 17 are similar views of still other variations of the present strut assembly.

It will be understood that the above drawings show merely preferred embodiments of the invention for illustration, and that other embodiments are contemplated within the scope of the claims hereafter set forth.

The present merchandise display equipment as shown in FIG. 1 is mountable on the floor **12** and along the wall **11** of a store or a room therein. As a first step in the assembly of the display equipment shown in FIG. 1, there is provided a horizontally disposed outwardly opening anchor channel **13**, which is secured by fasteners **14**, FIG. 4 along wall **11** at the proper height, having been precut to the required length. A standard height employed, for illustration, is 83½ inches to the top of this channel.

As a second step—a series of outwardly extending Z gusset brackets **16** are mounted along the top of channel **13** and secured thereto spaced at proper center to center measurements. For illustration, this measurement is usually 47½ in. Channel **13** has along its longitudinal outer edge a pair of spaced inwardly directed horizontal flanges **15** defining a longitudinal slot.

Nut **19** is slidably positioned upon the interior of channel **13** and maintained against the inner longitudinal edges of flanges **15** by coiled spring **20**, whereby said nuts are self-supporting within the channel and may be easily slid to the correct location for threadedly receiving the bracket fastening bolts **18**, FIG. 4. Said brackets include the horizontal outwardly extending top members **17** having spaced vertical apertures **28**.

As a next step, individual upright struts **21** are mounted upon floor **12** as shown in FIG. 2 and located directly under Z brackets **16—17**, and are secured thereto by fasteners **27**, FIG. 3.

It is usually advisable to mount the first and last strut **21** in a single run. A chalk line may then be pulled taut between the first and last struts to assist in the alignment of all other uprights in the run.

Each of the struts **21** includes an upright tubular channel support **25**, preferably of square cross section, which rests upon the floor parallel to wall **11** and spaced forwardly thereof.

Each support **25** has an adjustable foot **31** at its lower end which engages floor **12** and includes the upright threaded adjusting shaft **30** which projects axially upwardly through the transverse webs **29** at the lower end of support **25**, at least one of which is threaded. Accordingly, rotation of foot **30—31** will achieve the correct vertical adjustment of support **25** after which shaft **30** may be retained within support **25** against further inward adjustment by the bolt and nut assembly **33—34**, FIG. 5, within channel groove **35**. Upon final adjustment, the feet **31**, if desired, may be fixedly secured to the floor **12** by suitable fasteners **32**.

The above mentioned strut **21**, FIG. 2, also includes upright tubular body **22** which is adapted to normally bear against wall **11** beneath anchor channel **13**. Said body is preferably of square cross section and has formed

throughout its front surface a series of vertically spaced shelving mounting apertures **23**, as indicated on a larger scale in FIG. 12.

Horizontal tubular member **24** of similar cross section fixedly connects the lower end of body **22** with an adjacent portion of support 25. An additional horizontal tubular member **26** of similar cross section fixedly connects the upper end of body **22** with the top of support **25**; and in one embodiment thereof shown in FIG. 2, projects forwardly of said support, as shown also in FIG. 6.

The assembled rigid strut **21** is arranged in an upright position directly under the previously located gusset bracket **16—17** and is fixedly secured thereto by the above mentioned sheet metal fasteners **27** or equivalent fastener shown in FIG. 3.

The rear surfaces of supports **25** are vertically slotted at **35**, as indicated in FIGS. 5 and 10 and provide a means of bolting brackets or other fixtures upon the interior of the assembled display equipment.

For example, as shown in FIG. 10, a pair of L-shaped brackets **64** with upturned edges are adjustably mounted upon the interior surface of an adjacent pair of supports **25** as by the bolts **65** in an assembly similar to bolt and nut assembly **18, 19** and **20**, FIG. 4, for adjustably anchoring said brackets at the desired height. A suitable hang rod **66** is snugly interposed between brackets **64** and provides a means of hanging garments as shown in the completed assembly, FIG. 1.

As shown in FIGS. 3 and 16, end portions **36** project forwardly of the respective supports **25** and must be in substantial transverse alignment to receive the inwardly directed flanges **38** of the horizontally disposed channel **37**.

The light holding channel **37** is secured by suitable fasteners to the front ends **36** of horizontal braces **26**, at the same time making sure that the proper center to center distances are maintained between the struts.

Channel **37** includes the forwardly extending horizontal flange **39** which supportably receives and has secured longitudinally thereunder the lighting assembly **40** with associated fluorescent tube **41**, for illustration.

As a subsequent step, the preformed metallic cornice **42** or canopy is installed. Said canopy includes horizontal top flange **43** which overlies flange **39** and is fixedly secured thereto by a series of sheet metal or other fasteners **44**. Said canopy includes the downwardly extending longitudinally arranged preformed body **45** which shieldingly extends below the illuminating tubes **41** and is of any desired cross sectional shape as to direct the illumination inwardly. Thereafter the assembly is completed by fastening on one or both ends of the said cornice section a suitable end panel **46** as shown in FIG. 1.

Normally in the assembly of the present display equipment, one shelf, such as one of the shelves shown in FIGS. 7, 8 and 9, is mounted between a pair of struts **21** to serve as a spacer and to facilitate in the squaring off of said struts prior to fastening of feet **31** to floor **12**.

The elongated rectangular shaped top deck insert **47** for closing off the top of the display assembly is mounted in one or more pieces so as to span the tops of the strut members **26** with the front and rear edges thereof extending to and over portions of brackets **16—17**, as well as the corresponding flange **38** of light supporting channel **37**, best illustrated in FIG. 6.

One form of display shelf **48** is shown in FIG. 7, of a unitary construction which includes the rectangular frame **49**, horizontal platform **50** and the rearwardly extended notched mounting brackets **51** as an integral part thereof. The rear corners of frame **49** having notches **52** formed therein to cooperatively receive portions of strut bodies **22** as the rearwardly extending mounting fingers **53** with undercut notches **54** are retainingly projected within adjacent vertically spaced pairs of apertures **23** so as to interlockingly engage the bodies of adjacent struts **21**.

This construction eliminates the adjustment of fasteners for securing brackets to the shelving and provides a unitary shelf assembly which may be easily and conveniently projected horizontally between a pair of upright struts **21** for location vertically as desired, providing the type of display assembly shown in FIG. 1.

The brackets **51**, notches **52** and the vertically slotted and rearwardly extending fingers **53** in conjunction with frame **49** cooperatively engage the upright apertured bodies **22** of the said struts and provide a rigid mounting for said shelving which may not be accidently displaced. At the same time such construction permits the easy interchange or vertical adjustment of the shelving, as desired.

Instead of the plain surface shelving **48**, there is provided in FIG. 8, plastic tray display shelf **55**, shown in assembly in FIG. 1, which is similar in construction to shelf **48**, FIG. 7, but includes upon its top surface **50** the end L-shaped channels **56** suitably secured thereto and extending forwardly in parallel relation, and the series of upright parallel U-shaped spacer channels **57**.

These channels provide in conjunction with the longitudinal stop plate **58**, a series of guideways to supportably receive in spaced relation the preferably plastic transparent hollow trays **59**, FIG. 1.

This type of shelving may be easily removed simply by lifting the shelf as a whole upwardly and outwardly. This assembly eliminates loose hardware, gussets, stiffeners and brackets and simplifies relocation of shelves and other parts; and no tools are required.

A third illustrative form of shelf **60** is shown in FIG. 9, which includes rectangular metallic frame **61**, supporting the rectangular glass top **62**, said frame including a similar integral mounting bracket assembly **63**, the same as the integral bracket **51** of FIG. 7 and including the vertically slotted and notched rearwardly extending shelf supporting and retaining fingers **53**.

FIGS. 7, 8 and 9 show three forms of shelving which may be employed within the assembled display of FIG. 1, it being understood that any other type of rectangular shelving may be employed which incorporates this unitary frame and mounting bracket assembly and whereby the shelving may be easily adjusted, assembled or interchanged, as desired.

The hang rod **66** shown in FIG. 10 is preferably of a heavy-duty steel tubing and in the preferred embodiment is 47 inches long.

FIG. 11 illustrates a back display panel **67**, preferably 46 inches long, in the preferred embodiment, and including at its upper ends a pair of rearwardly extending mounting brackets **68** of inverted J-form, which are adapted to be supportably mounted either upon wall **11** within the assembled display or upon a transverse support **93** interposed between a pair of adjacent upright struts **21**. The panel **67** may be a Pegboard, as shown, or may be constructed as a panelboard, made of hardwood, plastic or may be in the form of a mirror.

There is shown in FIG. 2, mounting flanges **69** which are suitably secured upon the interior of struts **21**, as for example adjacent the horizontal tubular braces **24** to provide between the struts **21** horizontal supports for a storage cabinet **70** such as shown in FIG. 1. Such cabinet may be of various forms and include front sliding doors **71**, opaque or transparent, as desired.

The present construction provides for the location of such storage cabinets within the display assembly as and where desired, being interchangeable to different locations to serve the needs of the user. These storage cabinets are 46 inches long in the preferred embodiment. Another such storage cabinet is indicated at **72** in FIG. 1, mounted on similar flanges **69**, interposed between a pair of struts **21** and including sliding doors **73**.

A double drawer storage unit is indicated at **74**, FIG. 1, which includes top work surface **28'**. This unit provides two deep storage drawers which in the preferred embodiment are 22 inches high, **46** inches wide and 24 inches deep. These dimensions are again merely to indicate one practical assembly and are not by way of limitation.

Storage unit **74** is similarly mounted upon a pair of horizontal flanges **69**, as shown in FIG. 2, and may be easily removed, if desired.

FIG. 17 illustrates a slightly different form of unitary strut for a shelving display which includes upright tubular support body **76**, which bears against wall **11** and underlies horizontal anchor channel **13**. Forwardly extending tubular brace **77** joins the lower end of body **76**. Upright tubular leg **78** is secured to and depends from an intermediate portion of brace **77** and at its lower end engages floor **12**.

Body **76** at its upper end has joined thereto the tubular forwardly extending horizontal brace **79** which is anchored to channel **13** by **Z** gusset bracket **80** similar to the anchoring of top brace **26** in FIG. 3.

With a series of these struts arranged in upright position in longitudinally spaced relation at proper intervals and secured to channel **13** there will be provided a shelving assembly of slightly different form from that shown in FIG. 1. Body **76** has a similar series of vertically spaced apertures corresponding to apertures **23** of FIG. 12 adapted to supportably receive any of the shelving FIGS. 7, 8 and 9 in the same manner as above described.

The transverse longitudinal light mounting channel **37** similarly is joined to the corresponding outer ends of braces **79** of the struts and mounts the light assembly **41** and associated canopy **42**, in the same manner as above described in connection with FIGS. 3 and 6. In the strut construction of FIG. 17 the forward support **25** of FIG. 2 is eliminated.

Another variation of strut construction is shown in FIG. 13 wherein the upright body **81** adjacent wall **11** is joined at its top and bottom to intermediate portions of tubular support **83** by the tubular cross braces **82** and **85**.

Body **81** is constructed the same as the corresponding apertured body **22** of FIG. 2. Support **83** extends between floor **12** and ceiling **84** and at its respective opposite ends carries the adjustable feet **31** and associated adjusting screws **30** for fixedly securing support **83** as shown. This type of strut is recommended for use in stores where a special effect is desired to compensate for unusual store dimensions.

Top cross brace **85** projects forwardly of support **83** and in cooperation with a series of such struts has mounted upon its outer end a light mounting assembly and canopy **42** the same as above described.

The strut shown in FIG. 14 is the same as in FIG. 13, except that cross brace **86** ends at support **83** and no provision is made for a light canopy.

FIG. 15 shows a slightly different form of strut construction which provides for light canopy **42**, but which does not incorporate slotted wall engaging upright bodies for the accommodation of shelves. This structure is provided where single hang rod assemblies and double hang rod assemblies are the only ones required. This simplified strut includes the upright support **87** of similar tubular form with adjusting feet **30—31** engaging the floor **12** and having secured at its top transverse tubular cross brace **88**.

Said cross brace extends to wall **11** and is secured by a suitable **Z** gusset bracket **16** to the above described anchor channel **13** on wall **11**. Brace **88** projects forwardly of support **87** to provide for the mounting of a similar illuminating canopy **42** as above described.

Another form of rigid strut assembly is shown in FIG. 16, being somewhat similar to the strut of FIG. 2, but omits provision for illumination of the displayed goods. Here the strut includes upright tubular support **89** with adjustable foot **30—31** resting up on floor **12**, and the similarly apertured upright shelf supporting body **92** bearing against wall **11**.

The strut includes the horizontal tubular braces **90—91** which interconnect the upper and lower ends of body **92** with corresponding portions of support **89**. Brace **90** is anchored to wall **11** by bracket **16** which is secured to horizontal channel **13** mounted on said wall.

FIGS. 13 through 17 illustrate slightly different forms of strut construction in accordance with the present invention. These may be employed in a series respectively to provide display assemblies similar to that shown in FIG. 1.

Having described my invention, reference should now be had to the claims which follow.

I claim:

1. In combination with a floor and wall, a pair of parallel spaced upright forwardly extending struts arranged at right angles to said wall, each strut consisting of an upright tubular channel support parallel to and spaced forwardly of said wall, means at its lower end resting on the floor, an upright tubular body above the floor bearing against said wall, horizontal tubular braces fixedly connecting upper and lower ends of said body with said support, the front surface of said body having formed therein throughout its height a series of vertically spaced apertures, a bracket securing the top of each strut to said wall, a rectangular horizontally disposed shelf removably interposed between said pair of struts and including a rectangular frame, and rearwardly extending notched brackets on the rear ends of said frame, each bracket including a pair of vertically spaced notched fingers retainingly projected and nested within an adjacent pair of apertures in an adjacent pair of strut bodies respectively.

2. The display equipment of claim 1, and a horizontally disposed outwardly opening channel secured to said wall directly above the upper ends of said bodies, said strut securing brackets being secured to said latter channel.

3. The display equipment of claim 1, and a horizontally disposed outwardly opening channel secured to said wall directly above the upper ends of said bodies, said channel including vertically spaced inwardly directed longitudinally extending flanges, spring biased nuts slidably positioned in said channel bearing against said flanges, and bolts extending through said strut securing brackets and threaded into said nuts.

4. The display equipment of claim 1, the top brace between said body and support extending forwardly of said support, a longitudinally extending channel having laterally extending flanges on one side positioned over and secured to the outer ends of the top brace extensions of said struts, and a rectangular top deck insert mounted over and spanning the strut top braces and interposed between said wall engaging strut securing brackets and said latter channel.

5. The display equipment of claim 1, the top braces of said struts having forward extensions, a longitudinally extending channel interconnecting the outer ends of said brace extensions, said channel including a horizontally elongated flange, an elongated lighting assembly mounted and secured thereunder, and a formed light deflecting canopy mounting over said horizontal flange and extending between said struts.

6. In combination with a floor and a wall, a pair of parallel spaced upright struts arranged at right angles to said wall, each strut consisting of an upright tubular channel support resting on the floor parallel to and spaced forwardly of said wall, a horizontal channel secured to said wall above said struts, a horizontal forwardly extending top brace at one end engaging said wall, secured to said channel, joined to said support and projecting forwardly thereof, a light supporting channel bridging the outer ends of said top braces, a light assembly mounted on and depending from said light channel, extending between said struts, and a horizontally extending canopy mounted on said light channel and depending from the outer side thereof.

7. In combination with a floor and a wall, a pair of parallel spaced upright struts arranged at right angles to said wall, each strut consisting of an upright tubular body above the floor bearing against said wall, a horizontal

transversely extending anchor channel on said wall directly above said struts, a horizontally disposed forwardly extending support brace joined to the lower end of said body, a tubular leg depending from an intermediate portion of said brace and engaging said floor, an upper outwardly extending horizontal top brace joined to the upper end of said body and projecting outwardly thereof, a bracket securing said top brace to said horizontal channel, a light supporting channel bridging the outer ends of said top braces, a light assembly mounted on and depending from said light channel, extending between said struts, and a horizontally extending canopy mounted on said light channel and depending from the outer side thereof.

8. In combination with a floor and a wall, a pair of parallel spaced upright struts arranged at right angles to said wall, each strut consisting of an upright tubular body above the floor bearing against said wall, a horizontal transversely extending anchor channel on said wall directly above said struts, a horizontally disposed forwardly extending support brace joined to the lower end of said body, a tubular leg depending from an intermediate portion of said brace and engaging said floor, the forward surface of said body having formed therein a series of vertically spaced apertures, a rectangular horizontally disposed shelf removably interposed between said pair of struts and including a rectangular frame, and rearwardly extending notched brackets on the rear ends of said frame, each bracket including a pair of vertically spaced notched fingers retainingly projected and nested within an adjacent pair of apertures in an adjacent pair of strut bodies respectively, and a bracket securing each strut to said anchor channel.

9. In combination with a floor and a wall, a series of

parallel spaced upright struts arranged at right angles to said wall, each strut consisting of an upright tubular channel support resting on the floor parallel to and spaced forwardly of said wall, an upright tubular body above the floor bearing against said wall, horizontal tubular braces fixedly connecting upper and lower ends of said body with said support, the front surface of said body having formed therein throughout its height a series of vertically spaced apertures, a bracket securing the top of each strut to said wall, a rectangular horizontally disposed shelf removably interposed respectively between a pair of struts and including a rectangular frame, and rearwardly extending notched brackets on the rear ends of said frame, each bracket including a pair of spaced notched fingers retainingly projected and nested within an adjacent pair of apertures in an adjacent pair of strut bodies respectively.

References Cited in the file of this patent

UNITED STATES PATENTS

510,562	Breslin	Dec. 12, 1893
845,917	Worley	Mar. 5, 1907
1,554,011	Lehman	Sept. 15, 1925
2,650,145	Siemenski	Aug. 25, 1953
2,661,993	Little	Dec. 8, 1953
2,710,241	Lieberman	June 7, 1955
2,729,314	Doran	Jan. 3, 1956
2,838,355	Crowther	June 10, 1958
2,927,666	Braviak	Mar. 8, 1960
2,971,805	Weiss	Feb. 29, 1961

OTHER REFERENCES

Roberts Portable Oven Co. Catalog, April 15, 1907. (Copy Div. 52.)