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ADJUSTABLE SHELVING SUPPORTS

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2 Sheets-Sheet 1

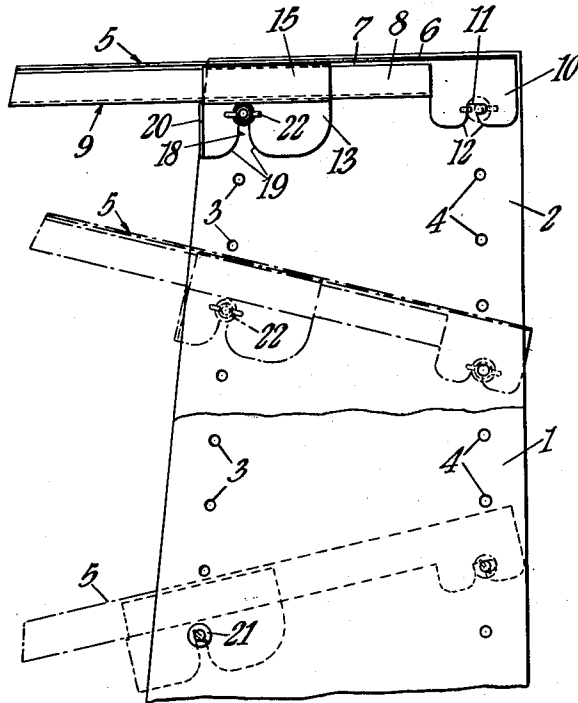


Fig. 1.

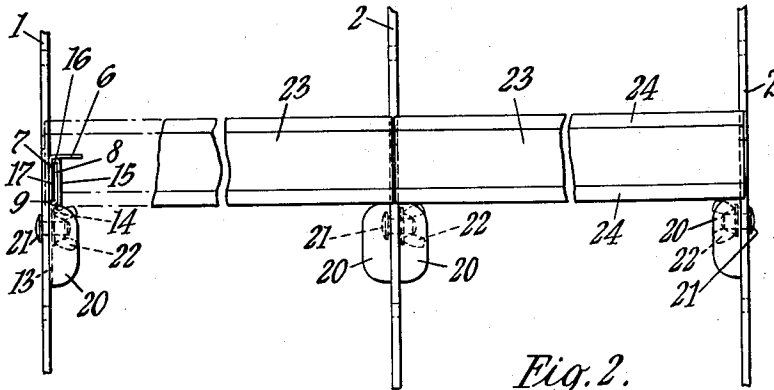


Fig. 2.

Dec. 24, 1963

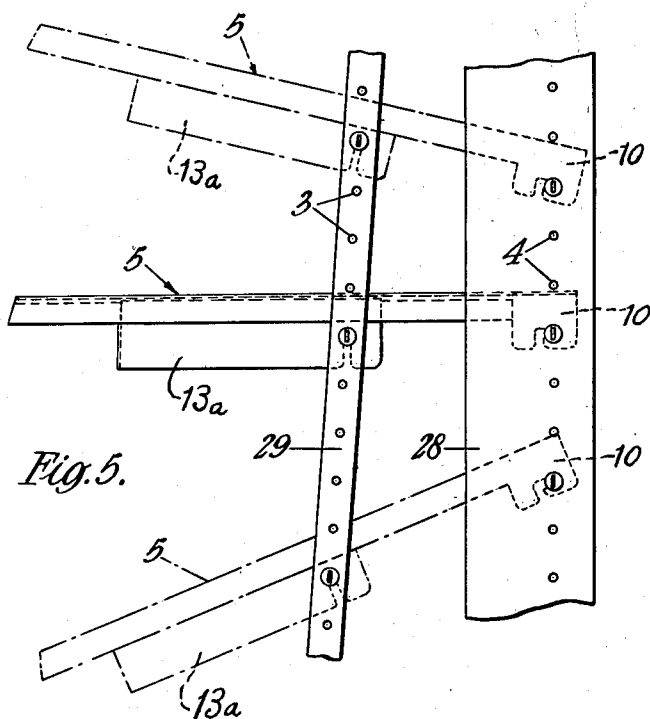
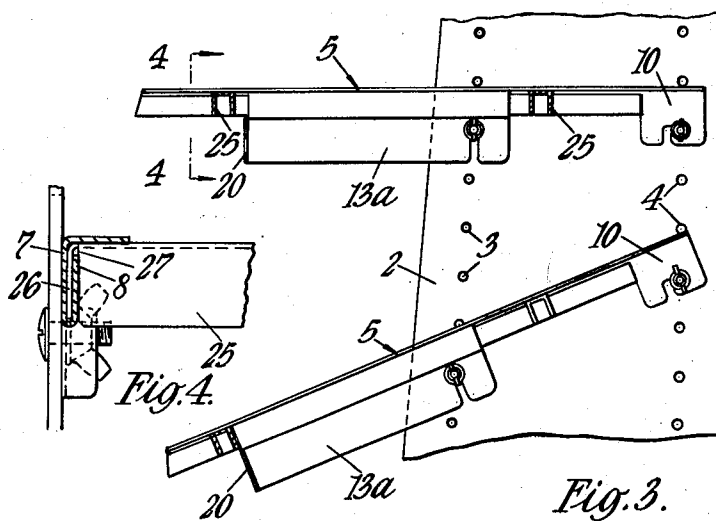
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1

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ADJUSTABLE SHELVING SUPPORTS

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6 Claims. (Cl. 211-134)

This invention relates to adjustable shelving supports and has for its object to provide improved supporting means for this purpose which can be readily and quickly adjusted both for height and for inclination of the shelves and which are also relatively simple and inexpensive to manufacture. The invention can be applied with particular advantage to shelving for display purposes, though not restricted thereto.

According to the invention an adjustable shelf support is constituted by relatively slidable members each of which is formed for attachment to a shelf receiving structure.

The invention also consists in an adjustable shelf support comprising a bracket member formed for attachment to a shelf receiving structure, and a support member slidably adjustable along said bracket member and also formed for attachment to said structure.

The invention also consists in a support according to either of the two preceding paragraphs in which said members are formed with open ended slots for engagement with attachment means such as bolts. Preferably one of the said slots is of undercut form.

The invention also consists in a support according to any of the three preceding paragraphs in which each of said members includes a part of narrow U-shape in cross section which parts are oppositely disposed and interengaged, the arrangement preventing relative movement other than sliding in the direction of the length of the support.

In a preferred construction according to the invention a bracket member of angle cross section has a vertical flange of narrow U-shaped section with a horizontal flange, and a support member slidable on the bracket member has a vertical flange of narrow inverted U-shaped section interengaged with the vertical flange of the bracket member and retained therein by the horizontal flange of the latter.

According to a further feature of the invention the relative lengths and dimensions of the relatively slidable members are such as to increase the load carrying capacity of that part of the support which overhangs the attachments thereof.

The invention also consists in a shelf assembly comprising spaced side members or plates each having two vertical series of spaced holes, and shelf supports according to any of the six preceding paragraphs attached or attachable to the said side members or plates by means engageable in the appropriate holes.

According to a further feature of the invention, shelf stiffening members extending laterally between the shelf supports are provided.

In the accompanying drawings,

FIGURE 1 is an end view of a portion of a shelf structure partly broken away and including shelf brackets constructed in accordance with one form of the invention;

FIGURE 2 is a front view of a shelf structure according to FIGURE 1 showing shelves ready for removal;

FIGURE 3 is an end view from the inside of a shelf structure showing a modified form of shelf bracket;

FIGURE 4 is an enlarged cross section on the line 4-4 of FIGURE 3 of a shelf bracket showing part of a stiffening member;

2

FIGURE 5 is an end view of a second modified form of shelf structure.

In carrying the invention into effect according to one convenient mode, described by way of example with reference to FIGURES 1 and 2, there is provided a shelf structure which includes two laterally spaced vertical side plates 1 and 2, parts of which are shown broken away, these side plates being connected laterally by any convenient means (not shown). Each side plate is formed with two upwardly extending series of spaced holes 3 and 4 to take bolts which secure the shelf brackets to the side plates. Each shelf bracket includes an angle strip 5 formed with a horizontal section 6, a vertical section 7, and a second vertical section 8 lying parallel to the vertical section 7 and joined thereto by a bottom U-bend 9. One end of the vertical section 7 is formed as a deeper plate portion 10 in which is provided an undercut slot 11 opening to the lower edge of the plate portion 10 through flared edges 12. Each shelf bracket also includes a support slidable in the U-shaped bracket sections 7 and 8 and comprising a vertical plate section 13 joined by a shoulder 14 to a vertical section 15 which latter is joined in turn by an inverted U-bend 16 to a downwardly extending vertical section 17 lying between the vertical sections 7 and 8 of the angle strip 5. The shoulder 14 is formed so that the outer faces of the sections 7 and 13 (FIGURE 2) are in vertical alignment. The support plate 13 is provided with a vertical slot 18 opening to the lower edge thereof through flared edges 19. The outer edge of the support plate 13 is formed with an inwardly turned flange 20 serving as a finger piece for sliding the support plate along the angle strip 5. The shelf brackets are secured to the inner faces of the side plates 1 and 2 by headed bolts 21 and wing nuts 22. The brackets are assembled by first engaging the undercut part of the angle strip slot 11 with a loose bolt in one of the rear holes 4 as seen in FIGURE 1 and then sliding the support plate 13 until its slot 18 can be engaged over a second loose bolt in one of the front holes 3. The nuts 22 are then tightened so that the brackets are firmly secured. It will be seen that by the provision of the slidable support plate 13 the brackets can be readily secured either in horizontal or in different inclined positions as may be required for display or other purposes. It will be seen that the support plate can be removed from the angle strip 5, and replaced thereon, by endwise sliding over the end opposite the plate part 10.

Shelves for use with the brackets described above may be of any desired form of construction and may be shaped to fit over the brackets in any convenient manner. FIGURE 2 shows a shelf structure having three side plates 1, 2, 1 provided with brackets and including two shelves 23 which are shown in position during removal thereof. Each shelf has a downward flange 24 at the front and rear thereof for location over the brackets.

The shelf brackets shown in FIGURES 1 and 2 are dimensioned to project a relatively short distance in front of the side plates. Where a deeper shelf having a greater forward projection is desired the construction shown in FIGURES 3 and 4 is employed. The angle strip 5 is generally of the same construction as previously described, but is lengthened as required. The slidable support 13a is also lengthened outwardly but is otherwise similar in construction to the previously described support 13. It will be evident that by reason of the longer support plate 13a the strength of each bracket in resisting downward loads thereon is increased exactly in the region where such greater strength is required, i.e. in the overhanging portion of the bracket. Where it is desired to afford extra strength to the shelf itself, stiffening members are provided which extend between adjacent brack-

3

ets. Two of these stiffening members are shown in FIGURE 3, and each consists of an inverted channel member 25 at each end of which there is provided a downwardly extending tongue 26. These tongues are spaced outwardly from the end edges 27 of the channel sides so that they can be introduced between the vertical sections 7 and 8 of the angle strips 5. Such introduction is effected by first removing the support plate 13a and sliding the tongues of one of the stiffening members endwise into the slots between the sections 7 and 8 at the free ends of the angle strips. The support plates 13a are then introduced by endwise sliding into the said spaces, and finally the second stiffening member is similarly introduced. These stiffening members may be readily positioned by sliding where required, and one, two or more such members may be provided according to the length of the brackets and the load required to be supported. FIGURE 3 shows two shelf brackets, the upper bracket being horizontal and the lower bracket being downwardly inclined.

A modified form of the side plates of the shelf structure is shown in FIGURE 5. Here each side plate comprises two upwardly extending plate members, namely a rear plate member 28 containing the attachment holes 4 and a front plate or strip member 29 containing the attachment holes 3 and spaced from the rear member. The members 28 and 29 are laterally connected by any convenient means (not shown) to form the shelf structure, the arrangement being otherwise as previously described. This form provides a more open structure and economises in material.

Shelf structures according to the invention are preferably formed from metal sheet, plate or strip, but other materials could be employed if desired.

I claim:

1. A shelving assembly having spaced, and connected side members to which adjustable shelf supports can be detachably secured, and shelf supports each comprising a bracket having a straight shelf receiving part and first and second downwardly extending bracket parts each attached laterally to a side member of the assembly, said first downwardly extending part being located at least near one end of the straight part and integral therewith, and said second downwardly extending part being interengaged with said straight part for slidable adjustment therealong, whereby the bracket may be afforded two

4

selective spaced points of supports and one unsupported and outwardly projecting end.

2. A shelving assembly according to claim 1 in which the straight part of the bracket is formed from sheet material to include a longitudinally extending cross section of narrow U-shape, and the second downwardly extending bracket part is formed from sheet material to include a cross section of narrow U-shape interengaged with the U-shaped section of said straight part.

3. A shelving assembly according to claim 1, in which the straight part of the bracket is formed from sheet material to include a horizontal flange and a vertical flange, said vertical flange having a cross section of narrow U-shape lying within said horizontal flange, and said second downwardly extending bracket part being formed from sheet material to include a vertical flange of inverted narrow U-shape in cross section interengaged with the U-shaped vertical section of said straight part and retained therein by the said horizontal flange.

4. A shelving assembly according to claim 1 in which the side members are formed with two vertical series of spaced holes and the first and second downwardly extending bracket parts have downwardly facing open ended slots for engagement with clamping attachment means extending through said holes.

5. A shelving assembly according to claim 1 and further comprising at least one shelf stiffening member extending between two laterally spaced shelf supports and attached to the latter.

6. A shelving assembly according to claim 1 and further comprising at least one shelf stiffening member extending between two laterally spaced shelf supports, the straight part of each shelf support including a narrow vertical U-shaped section, and each end of each shelf stiffening member having a downwardly extending tongue engaged in said U-shaped section whereby the shelf stiffening member is secured to the shelf supports.

References Cited in the file of this patent

UNITED STATES PATENTS

903,821	Karges	Nov. 10, 1908
1,876,172	Ruddy	Sept. 6, 1932
2,760,649	Rataiczak	Aug. 28, 1956
2,790,559	Stephenson	Apr. 30, 1957
2,884,296	Meilinger	Apr. 28, 1959