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3,010,585

ADJUSTABLE SHELVING

Filed Jan. 25, 1957

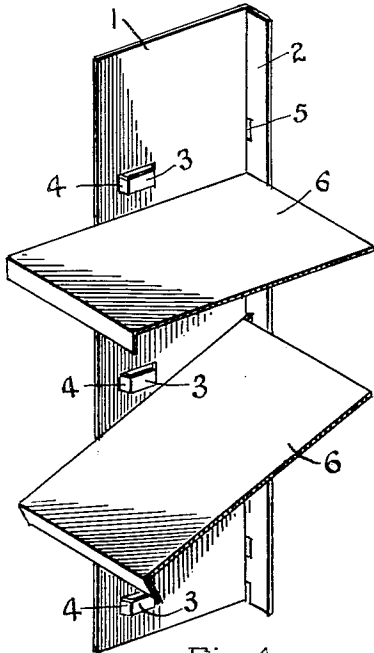


Fig. 1.

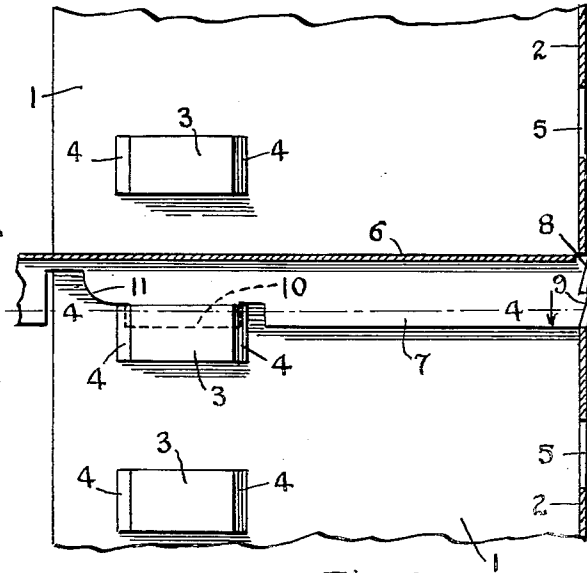


Fig. 2.

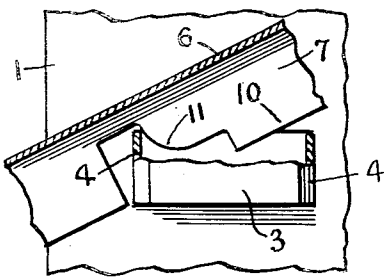


Fig. 5.

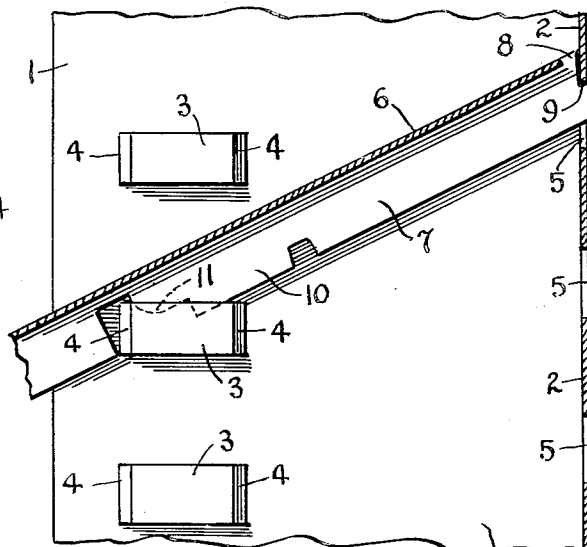


Fig. 3.

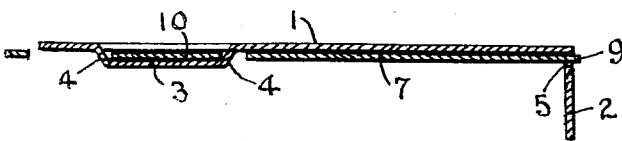


Fig. 4.

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3,010,585

ADJUSTABLE SHELVING

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9 Claims. (Cl. 211-136)

This invention relates to adjustable shelving especially intended to display goods for sale although it can have other uses. Display shelves are usually supported in a horizontal plane but for the best display of some goods it is desired to support the shelves in an inclined plane sloping downwardly from rear to front and in a tier of shelves it may be desired to have some of the shelves horizontal and others inclined.

This invention provides means for supporting several shelves in a tier so that any of them may be adjusted to either a horizontal or an angular position whereby a single shelving structure may satisfy the requirements of goods displayed thereon.

The shelf supporting means also enables the vertical spacing between the shelves to be varied and also permits the number of shelves to be varied.

The invention provides various new and useful features of construction and arrangement hereafter more fully described, reference being had to the accompanying drawings in which:

FIG. 1 is a fragmentary perspective view of a portion of the frame having two shelves supported thereon.

FIG. 2 is an enlarged fragmentary sectional elevation of the shelf structure showing a shelf supported in horizontal position.

FIG. 3 shows the same parts as FIG. 2 with the shelf adjusted to inclined position.

FIG. 4 is a horizontal section on the line 4-4 of FIG. 2 and

FIG. 5 is an enlarged fragmentary vertical section showing details of the adjustable shelf supporting means.

Like reference numerals apply to like parts in all of the figures.

The shelving structure comprises two vertical end members 1, one of which is shown. The end members 1 are alike and supported by suitable means not shown. Each end member 1 has a vertical right angle flange 2 at its rear edge which may be formed integrally with the end member.

Near the forward edge of the end member a series of sockets are formed by lancing out a part of the end member, each socket being open at top and bottom and having a vertical side wall 3 spaced from the end member 1 and vertical end walls 4 which join the vertical side wall 3 with the end member.

The sockets are in equally spaced superposed relation and a like number of vertical slots 5 are provided in the flange 2 at its juncture with the end member 1. Each slot 5 has the same vertical relationship with a corresponding socket.

The shelves 6 are rectangular in shape and each shelf has at each end a downwardly extending flange 7 which may be formed integrally with the shelf. Each flange 7 at its rear end projects slightly beyond the shelf where it is provided with two projections 8 and 9, one above the other.

In mid position the lower edge of each flange 7 is notched to provide a tongue 10 which enters one of the sockets when the shelf is in horizontal position (FIG. 2), the tongue 10 being substantially the same length as interior length of the socket between the end walls 4. In this horizontal position both projections 8 and 9 enter one of the slots 5 where they are held to support the rear edge of the shelf by reason of the tongue 10 fitting

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snugly into the socket and preventing lengthwise movement of the flange 7.

The notch in the flange 7 forwardly of the tongue 10 is provided with a cam portion 11. When the shelf is in angular position (FIGS. 3 and 5) the lower projection 9 at the rear of the flange 7 enters a slot 5 and the forward part of the tongue 10 and the cam 11 enter a socket.

In this position the cam 11 engages the forward end wall 4 of the socket preventing forward movement of the shelf and holding the lower projection 9 of the flange 7 in the slot 5. In this angular position the upper projection 8 of the flange is thrust firmly against the forward face of the flange 2 by action of the cam 11 preventing downward movement of the rear part of the shelf and upward movement thereof, by cantilever action because of weight on the forward part of the shelf, is prevented by engagement of the projection 9 with the upper edge of the slot 5.

To remove the shelf its forward edge is raised to lift the tongue 10 and cam 11 from the socket and the shelf is then moved forward to pull the projections 8 and 9 of the flange 7 from the slot 5. To reinsert the shelf, in either horizontal or angular position, the reverse action is performed.

Thus it will be seen that this shelving structure will support any plurality of shelves, within its capacity, at various vertical spacing and in either horizontal or inclined planes, the shelves being firmly held in their adjusted positions but being easily removed when desired. The structure is simple and economical to build.

The invention is defined by the appended claims and is to be considered comprehensive of all forms coming within their scope.

I claim:

1. In an adjustable shelving structure comprising, an end supporting member having a plurality of vertically spaced slots near its rear edge, said end supporting member having a plurality of upwardly opening sockets vertically spaced near the forward edge, a plurality of shelves each having a rearward projection at its rear edge entering one of said slots, a downwardly extending tongue at the end of each shelf adjacent said end supporting member, each tongue being spaced forwardly from the rear of the shelf to enter one of said sockets and to engage the forward edge thereof when the shelf is in horizontal position and a cam on said end of each shelf and forward of the tongue spaced to enter said one socket and to engage the forward edge thereof when the shelf is in inclined position and acting to thrust said projection into another slot.

2. The device defined in claim 1 having another projection superposed over said previously named projection and having a downwardly and forwardly slanting rearward edge for engaging the forward surface of said end supporting member immediately above a given one of said vertically spaced slots into which said first-named projection extends when said shelf is in an angled position whereby to limit rearward movement of said shelves.

3. The device defined in claim 1 wherein the forward edge of said tongue is curved downwardly and rearwardly to constitute said cam.

4. In shelving structure including shelf means and supporting means including an end panel and a back panel adaptable for supporting said shelf means in either of two positions with respect to said supporting means, the combination comprising:

- an upwardly opening socket on said end panel and a plurality of openings superposed one above the other in said back panel, said upwardly opening socket being spaced forwardly from said openings;

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a downwardly extending flange included in said shelf means;

said flange having a downwardly extending tongue, a rounded cam forwardly of said tongue and a projection extending rearwardly from the rear end of said flange, said tongue being spaced from said rear end a distance slightly greater than the spacing between said socket and that portion of said back panel which surrounds a selected first opening therein; and

the forward face of said cam being spaced from said rear end a distance substantially equal to the distance between a forward extremity of said socket and the upper edge of a second opening located above said first opening;

whereby in one position of said shelf said flange will extend through a first opening in said back panel when said tongue is received into said socket and in a second position of said shelf said projection will engage said upper edge when said cam engages the forward wall of said socket and the rear end of said flange above said projection will bear against said back panel.

5. The device defined in claim 4 wherein said first opening is substantially horizontally positioned with respect to said socket.

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6. The device defined in claim 4 wherein said first opening is substantially horizontally placed with respect to said socket and said second opening is that opening immediately above said first opening.

7. The device defined in claim 4 wherein said cam is a portion extending forwardly from said tongue and wherein a notch is provided in said flange and forward of said cam for the reception of the forward wall defining said socket.

8. The device defined in claim 4 having a plurality of upwardly opening sockets superposed one above the other and each socket respectively arranged substantially horizontally with respect to one of said openings.

9. The device defined in claim 8 wherein said sockets are formed by displacing material from said end wall whereby each of said sockets is provided with a side wall and end walls connecting said side walls to said end wall.

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Disclaimer

3,010,585.—*Leslie V. Slickers*, Grand Rapids, Mich. **ADJUSTABLE SHELVING.**
Patent dated Nov. 28, 1961. Disclaimer filed June 20, 1962, by the assignee, *The Bulman Corporation*.

Hereby enters this disclaimer to claims 1 through 9, of said patent.
[*Official Gazette July 31, 1962.*]