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ADJUSTABLE ANGLE BRACKET
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The present invention relates to a support for shelving and the like, and more particularly to a shelf support bracket of the type having rearwardly extending hooked extensions on the rear end of the bracket which are adapted to extend into similarly spaced slots in the front wall of an upright and which is supportable in at least three different angular positions. Brackets of this type generally having notches in the upper edges of one or more of the bracket extensions which permit the adjustment of the angle of the bracket by the engagement of different notches with the front walls of the uprights.

An object of the invention is to provide an improved bracket construction of the type described which permits the bracket to be supported at a number of angles with respect to the upright by means of uniquely shaped and placed notches in the bracket extensions which enhances the stability and flexibility of the bracket.

In the most preferred form of the invention, instead of placing angle adjusting notches in the upper edges of the one or more bracket extensions, uniquely shaped notches are placed in the bottom edges of the bracket extensions. (It should be understood, however, that certain broader aspects of the invention have application to brackets where the uniquely shaped notches are placed in the upper edges of the hooked bracket extensions.) The placement of the notches in the bottom edges of the bracket extensions permits the brackets to be inserted in place within an upright by moving the bracket horizontally to bring the extensions into the upright slots and then dropping the bracket to bring the defining walls of the notches into engagement with the portion of the upright below the upright slots. This is particularly advantageous when an entire shelf assembly including a pair of brackets and a shelf extending therebetween carrying articles thereon is mounted on a pair of uprights in a horizontal position. In such case, a bracket insertion requiring tilting and rotation of the brackets during insertion would not be permitted. At least two such notches are placed in or are formed by each of the bracket extensions with at least three of the notches having side margins extending at different angles to one another in accordance with the different angles at which the bracket is to extend. The defining walls of one of the notches associated with each bracket extension is active in supporting the bracket from the upright at each support angle and the notches are shaped and positioned so that the notch walls engage opposite sides of the bracket at spaced points. This materially improves the stability of the bracket.

The above and other objects, advantages and features of the invention will become apparent upon making reference to the specification, to follow, the claims and the drawings wherein:

FIG. 1 is a side elevational view of the bracket constructed in accordance with the preferred form of the invention;

FIG. 2 is a side elevational view of the bracket of FIG. 1 carrying a shelf shown in section, the bracket being supported in a horizontal position from an upright also shown in section;

FIG. 3 shows the shelf assembly of FIG. 2 supported from the upright at an upwardly inclined angle;

FIG. 4 shows shelf assembly supported from the upright at a downwardly inclined angle; and

FIG. 5 is a reduced perspective view of a shelf assembly

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like that shown in FIGS. 2 through 4 as it is held in position to be mounted upon a pair of spaced uprights.

The bracket 2 shown in the drawings is a relatively thin sheet metal stamping of aluminum or other similar material having an elongated shelf support portion 2a and an upright engaging portion 2b at the inner end thereof. The bracket upright engaging portions 2b has projecting from the rear edge 4 thereof a pair of vertically spaced, downwardly hooked extensions 6a and 6b. Hooked extensions 6a and 6b are adapted to support the bracket 2 in the various angular positions shown in the drawings. The hooked extensions 6a and 6b engage with the defining walls of a pair of vertically spaced slots 8a and 8b formed in the front wall 8 of an upright 10. The bracket 2 may be mounted on the upright 10 by a simple horizontal rearward movement of the bracket 2 to bring the hooked extensions into the upright slots 8a-8b and then lowering the same into position on the upright.

A shelf 12 may be supported in position on the bracket 2. To this end, the shelf 12 may be provided with a bifurcated depending flange 14 which straddles the shoulder 16 of a notch 18 formed in the upper edge of the bracket. FIG. 5 shows a complete bracket and shelf assembly 20 comprising a pair of brackets 2-2 and a shelf 12 extending therebetween. The shelf assembly may be inserted in position on the upright 10 while it supports articles by the simple expedient of moving the shelf assembly rearwardly to bring the bracket extensions into the upright slots 8a and 8b and then dropping the same while maintaining the horizontal orientation of the shelf 12.

To the end of supporting the bracket 2 stably in any one of three angular positions, the upper hooked extensions 6a is provided with a downwardly and forwardly extending notch 22 opening onto the bottom edge of the extension between the inner and outer edges 24 and 26 thereof. Where one of the positions of the bracket is to be a horizontal position, the inner edge 24 of the hooked extension 6a extends along a line which is transverse to the upper edge 27 of the shelf supporting portion 2a of the bracket 2. The notch 22 has a width substantially greater than the thickness of the upright wall 8, and the opposite side edges 22a-22b thereof preferably incline downwardly and forwardly with respect to the inner edge 24 of the hooked extension 6a. The inner edge 24 of the hooked extension 6a is in spaced confronting relation with the portion 4a of the rear edge 4 of the bracket and forms therewith the notch 26 below the upper hooked extension 6a. In the illustrated embodiment of the invention, the edge portion 4a inclines downwardly and rearwardly with respect to the inner edge 24 of the hooked extension 6a. The bracket edge portion 4a merges with an edge portion 4b at the bottom thereof which is parallel to the plane of the inner edge 24 of the upper hooked extension and spaced therefrom a distance approximately the thickness of the front wall 8 of the upright 10.

The rear edge 4 of the bracket 2 intersects the upper margin of the lower hooked extension 6b of the bracket. The lower hooked extension 6b has a notch 30 in the bottom thereof between the inner and outer edges 32 and 33 thereof. In the form of the invention illustrated, the notch 30 is positioned outwardly of the notch 22 in the upper hooked extension 4a and inclines generally rearwardly and outwardly of the same. The notch 30 has a pair of sides 30a and 30b which are parallel to one another and are spaced apart preferably approximately the thickness of the front wall 8 of the upright 10. As best shown in FIG. 3, the side 30a of the notch 30 preferably extends along a line which intersects or passes through the rear edge of the recesses 22 in the upper hooked extension 6a for reasons to be explained.

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The inner edge 32 of the lower hooked extension 6b confronts and is preferably parallel to a portion 4c of the rear edge 4 of the bracket below the lower hooked extension 6b and forms therewith a notch 34 which is substantially wider than the thickness of the front wall 8 of the upright 10. The rear edge portion 4c of the bracket is in the same plane as the rear edge portion 4b of the bracket above the lower hooked extension 6b. The bottom of the rear edge portion 4c of the bracket merges with a downwardly and forwardly inclining edge portion 4d which is in a plane which is parallel to the plane of the rear side 22a of the notch 22 in the upper hooked extension 6a and spaced therefrom a distance about equal to the thickness of the front wall 8 of the upright 10.

To support the bracket 2 in a horizontal position from the upright 10, the hooked extensions 6a and 6b of the bracket are inserted through a pair of vertically spaced slots 8a and 8b in the upright 10 and then dropped into position where the defining walls of the notches 26 and 34 at the inner edges of the hooked extensions engage with the front wall 8 of the upright 10 below the upright slots 8a and 8b. It can be seen from FIG. 2 that the inner edge of the upper hooked extension 6a engages the inner or rear face of the upright wall 10, and the rear edge portions 4b and 4c of the bracket engage the outer surface of the upright wall 8 stably to support the bracket in a horizontal position.

To support the bracket 2 at an upwardly inclining angle as shown in FIG. 3, the hooked extensions 6a and 6b are dropped into a position where the outer surface of the upright wall 8 below the slots 8a and 8b are received in the notch 30 in the lower hooked extension 6b and the notch 22 in the upper hooked extension 6a, respectively. In such case, the sides 30a and 30b of the notch 30 engage the opposite sides of the upright wall 8, the inner surface of the upright is engaged along lines on the end of 22c and the outer side 22a of the notch 22 of the upper hooked extension 6a and the outer surface of the upright will be engaged by the front side 22b of the notch 22.

To support the bracket 2 at a downwardly inclining angle as shown in FIG. 4, the hooked extensions 6a and 6b are dropped into position in the upright slots 8a and 8b where the upright wall 8 is received within the notch 24 at the inner edge of the lower hooked extension 6b and the notch 22 in the upper hooked extension 6a. In such case, the inner surface of the upright wall 8 will be engaged by the rear side 22a of the notch 22 in the upper hooked extension 6a, and the outer surface of the upright is engaged by the end of the slot 34 of the hooked extension 6b and the rear bracket edge portion 4d.

It should be understood that numerous modifications may be made in the preferred form of the invention described above without deviating from the broader aspects of the invention.

I claim:

1. In combination, an upright having a front wall having at least one pair of vertically spaced slots therein; and a bracket having only one pair of vertically spaced, downwardly hooked extensions projecting from the rear edge of the bracket and insertable into said pair of slots in the front upright wall and having inner edges spaced from and confronting the rear bracket edge to define therewith first and second vertically spaced notches for receiving the front wall of the upright below said upright slots, the

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upper hooked bracket extension having a notch opening onto the bottom thereof at a point between the inner and outer edges thereof, the lower hooked extension having a notch opening onto the bottom thereof at a point between the inner and outer edges thereof and said bracket being engageable with said front upright wall below said slots thereof in at least three different angular positions where the upright wall below said slots is engaged by the defining walls of three different pairs of said notches, each pair comprising one of the notches formed in or by the upper hooked extension and a notch formed in or by the lower hooked extension of the bracket, in each one of said angular positions of the bracket said front upright wall being engaged on both of the opposite faces thereof by edge portions of the bracket.

2. A bracket supportable in an upright having at least a front wall with one pair of vertically spaced slots therein, said bracket having only one pair of vertically spaced downwardly hooked extensions projecting from the rear edge of the bracket and adapted to be insertable into said pair of slots in the front upright wall and having inner edges spaced from and confronting the rear bracket edge to define therewith first and second vertically spaced notches for receiving the front wall of the upright below said upright slots, the upper hooked bracket extension having a notch opening onto the bottom thereof at a point between the inner and outer edges thereof, the lower hooked extension having a notch opening onto the bottom thereof at a point between the inner and outer edges thereof, and said bracket being adapted to be engaged with said front upright wall below said slots thereof in at least three different angular positions where the upright wall below said slots is engaged by the defining walls of three different pairs of said notches, each pair comprising one of the notches formed in or by the upper hooked extensions and a notch formed in or by the lower hooked extension of the bracket, the notch in the upper hooked bracket extension between the inner and outer edges thereof having parallel margins for their full length inclining downwardly and forwardly with respect to all of the other of said notches, and the rear edge of the bracket and the notch in the lower hooked bracket extension between the inner and outer edges thereof inclining downwardly and rearwardly with respect to all of the other of said notches and the rear edge of the bracket.

3. The bracket of claim 2 wherein the inner edge of said upper hooked bracket extension and the rear bracket edge confronting the inner edge of said lower hooked bracket extension are in parallel planes spaced apart a distance approximately equal to the thickness of the front upright wall, wherein the opposite sides of the front wall of the upright are engaged by the inner edge of the upper hooked bracket extension and the rear edge of the bracket below said lower hooked bracket extension in one of the angular positions of the bracket.

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