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SHELF BRACKET

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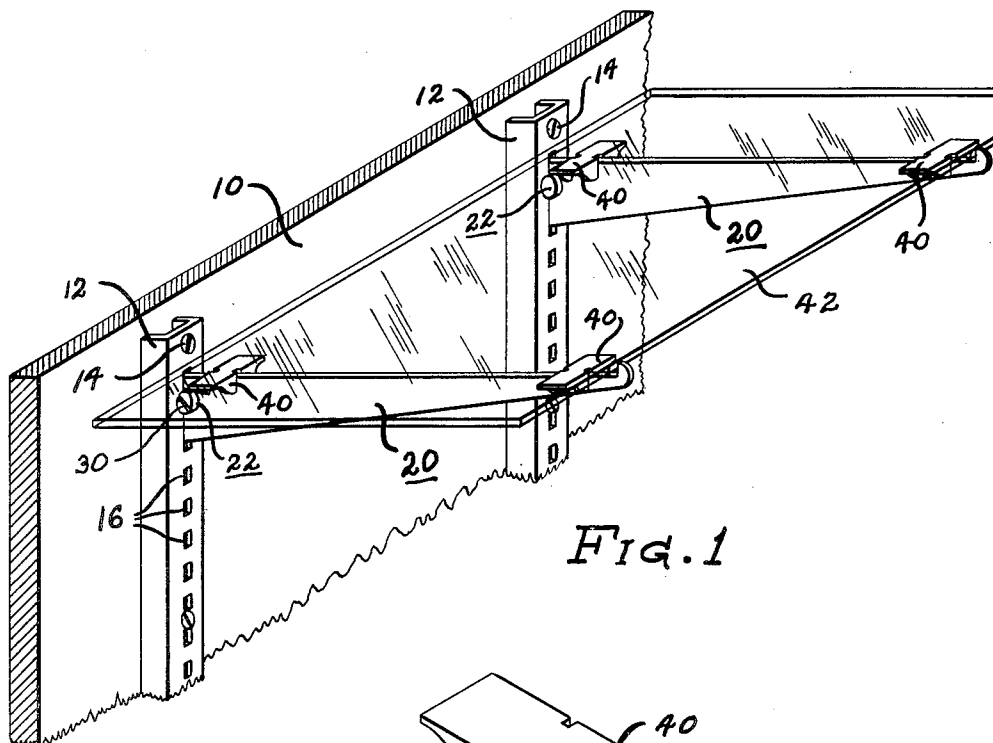


Fig. 1

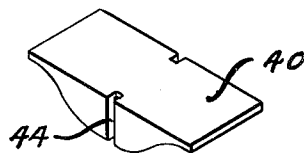


Fig. 3

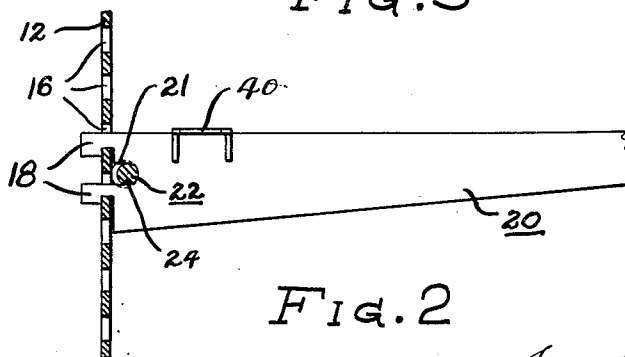


Fig. 2

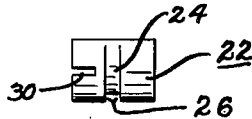
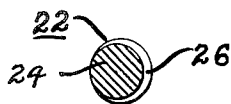


FIG. 4

Fig. 5

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UNITED STATES PATENT OFFICE

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SHELF BRACKET

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5 Claims. (Cl. 248-243)

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This invention relates to a shelf bracket and more particularly to a shelf bracket of the type which is readily adjustable and removable.

The bracket disclosed herein is particularly suitable for use in refrigerator cabinets and the like wherein portions of the cabinet interior are made of glass or other frangible material. It is desirable to be able to mount the brackets in place at the factory prior to shipment but with the ordinary brackets now commonly used in refrigerator cabinets and the like, jarring of the cabinet, such as takes place during shipment, causes the brackets to come loose and fall out of place and sometimes break or chip the interior finish. It is an object of this invention, therefore, to provide a shelf bracket which may be inserted in a cabinet or the like at the factory without any danger of the bracket coming loose during shipment.

More particularly it is an object of this invention to provide a bracket arrangement which is readily removable but which is firmly held in place when once installed.

Another object of this invention is to provide a low cost bracket which is neat in appearance.

Another object of this invention is to provide an improved shelf supporting pad which is removable from the shelf bracket.

In the shelf bracket arrangements used prior to my invention, it would frequently happen that the shelf supporting brackets would not line up at right angles to the supporting wall. It is a further object of this invention to provide a bracket having means which not only locks the shelf bracket in place but also holds the shelf bracket at right angles to the supporting wall.

Further objects and advantages of the present invention reside in the construction and combination of parts and in the mode of operation as will be apparent from the following description, reference being had to the accompanying drawings wherein a preferred form of the present invention is clearly shown.

In the drawings:

Figure 1 is a fragmentary pictorial view showing a preferred shelf bracket arrangement for supporting a glass shelf in a refrigerator or the like;

Figure 2 is a fragmentary sectional view showing my improved arrangement for holding the shelf bracket in assembled relationship relative to the apertured shelf bracket support;

Figure 3 is a perspective view of a shelf supporting pad for use with the bracket;

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Figure 4 is a sectional view taken midway between the ends of the cam element; and

Figure 5 is a plan view of the cam element which is used for holding the bracket in place.

Referring now to the drawings wherein I have shown a preferred embodiment of my invention, reference numeral 10 designates a wall member on which there are mounted two or more U-shaped channel members 12 which may be held in place on the wall 10 by any suitable means such as the screws 14. The channel members 12 may be of any desired length and normally extend from the top of the cabinet to the bottom of the cabinet so as to make it possible to mount shelves at any desired height within the cabinet. Each channel member is provided with a plurality of vertically spaced apertures 16 which are adapted to receive the projecting lugs 18 provided on each of the shelf brackets 20. The projecting lugs 18 are hook shaped so as to hook on to the channel members 12 as best shown in Figure 2. Each bracket is slotted as indicated at 21 for receiving a cam lock or wedge element generally designated by the reference numeral 22. The cam lock or wedge is provided with a reduced portion 24 intermediate its ends. The axial length of the reduced portion 24 is equal to or slightly greater than the thickness of the material out of which the shelf bracket 20 is made whereby the opposed walls 26 serve to hold the bracket perpendicular to the front face of the channel member 12 which in turn is parallel to the surface of the supporting wall 10. The reduced portion 24 fits into the slot 21 provided in the shelf 20 and by rotating the cam lock element 22 the projecting lugs 18 are forced into firm engagement with the rear wall of the channel member 12 so as to frictionally hold the shelf bracket in position. The cam lock element 22 is provided with a slot 30 for the reception of a screw driver whereby it is possible to use considerable force in rotating the cam lock element 22. The eccentricity of the reduced portion 24 relative to the main axis of the element 22 is not very great with the result that once the element 22 is rotated into shelf locking position it will not be loosened by vibration such as incidental to shipment and handling of the cabinet.

The shelf bracket 20 is preferably made in the form of a flat stamping so as to keep the cost of the shelf bracket at a minimum. Since it is common practice to use glass shelves and to make the shelf brackets out of thin sheet material it is desirable to provide shelf supporting pads 40 on which the shelf 42 rests.

For purpose of illustration, I have shown a transparent glass shelf whereas it is within the purview of this invention to use transparent plastic or other types of shelves if desired. The shelf pads 40 are made of transparent plastic material such as methyl methacrylate or vinylidene chloride so as to provide an inconspicuous pad which will not scratch the shelf 42 and the shelf bracket 20. The use of plastic shelf supporting pads such as pads 40 not only protects the surfaces engaged thereby from scratches but also eliminates the cost of and the need for rubber inserts such as normally used in conjunction with metal pads for supporting the shelves. When using plastic shelves and pads, the shelves may be attached to the pads by applying a few drops of solvent to each pad just before placing the shelf on the pads. The shelf engaging slots 44 of the pads 40 are made narrow enough so as to firmly grip the sheet metal bracket 20 whereby the pads remain in place even though the cabinet is inverted or jarred.

By virtue of the above described bracket construction it is apparent that the brackets together with the shelf supporting pads 40 may be assembled at the factory without any danger of them becoming loose during shipment. This not only protects the interior of the cabinet from damage but also saves considerable time and eliminates the need for replacing lost or damaged parts.

While the form of embodiment of the invention as herein disclosed, constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

Having thus described my invention, I claim:

1. In combination, a vertically disposed supporting member having a plurality of vertically spaced apertures therein, a sheet metal bracket having a plurality of hook shaped projections at one end arranged for registry with certain of said vertically spaced apertures and for hooking on to said supporting member, said bracket having a cam receiving slot at said end, a cylindrical cam element disposed within said slot and in engagement with said supporting member, said cam element having a peripheral groove intermediate its ends whereby a reduced cylindrical portion eccentric to the end portions is formed, the axis of said cylindrical cam element being arranged perpendicular to the plane of said sheet metal bracket with the outer periphery of the cam in engagement with said supporting member and with the bottom of said groove in engagement with said bracket.

2. In a shelf construction for use in refrigerators and the like, a mounting member having a plurality of vertically spaced apertures, a substantially flat sheet metal bracket having a plurality of hook shaped projections at one end arranged for registry with certain of said vertically spaced apertures and for hooking on to said mounting member, said bracket having a cut away portion at said end, a cylindrical cam element having a circumferential groove intermediate the ends thereof whereby a reduced circular central portion is formed which is eccentric to the end portions of said cam element, said reduced central portion being arranged within said cut away portion of said bracket and having an axial length

substantially equal to the thickness of said bracket whereby the sides of said bracket adjacent said cut away portion are adapted to closely fit within said groove so as to hold said bracket in perpendicular alignment relative to said first named member.

3. In a shelf construction for use in refrigerators and the like, a mounting member having aperture means provided therein, a bracket member having hook means extending through said aperture means, said bracket member having a cam surface arranged in close proximity to said mounting member, a rotatable cam wedge arranged between said cam surface and said mounting member, said wedge having a first cylindrical surface means engaging said mounting member and a second eccentric cylindrical surface in engagement with said cam surface provided on the bracket, said second cylindrical surface means being eccentric to said first cylindrical surface means whereby rotation of said rotatable wedge varies the force applied by said wedge, said rotatable wedge having surface formed thereon for holding said brackets at right angles to said mounting member.

4. In combination, a first member having aperture means provided therein, a second member having hook means extending through said aperture means, said second member having a cam surface arranged in close proximity to said first member, a rotatable cam wedge arranged between said cam surface and said first member, said wedge having a first cylindrical surface means engaging said first member and a second eccentric cylindrical surface in engagement with said cam surface provided on the second member, said second cylindrical surface means being eccentric to said first cylindrical surface means whereby rotation of said rotatable wedge varies the force applied by said wedge, said rotatable wedge having a surface formed thereon for holding said second member at right angles to said first member.

5. In combination, a first member comprising a support, a second member having means provided thereon for engaging said support, means for wedging said first named means into firm engagement with said support comprising a cylindrical wedge element having a circumferentially extending groove with the bottom surface thereof disposed eccentrically relative to the outer periphery of said cylindrical wedge element, one of said members having a cam surface formed thereon for engaging with said groove and the other of said members having a cam surface for engaging the outer periphery of said wedge element.

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