June 14, 1960 W. G. SMITH 2,940,601

SHELF CONSTRUCTION

Filed Feb. 6, 1958

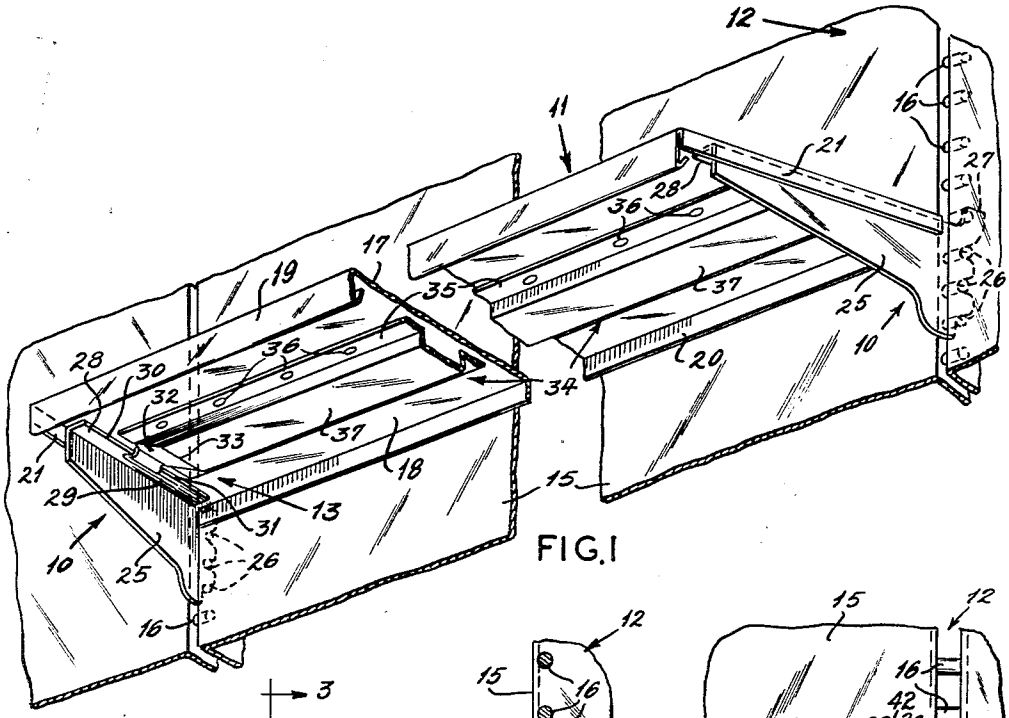


FIG. 1

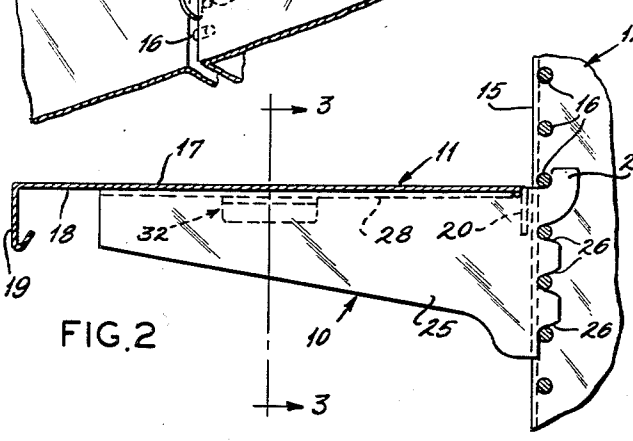


FIG. 2

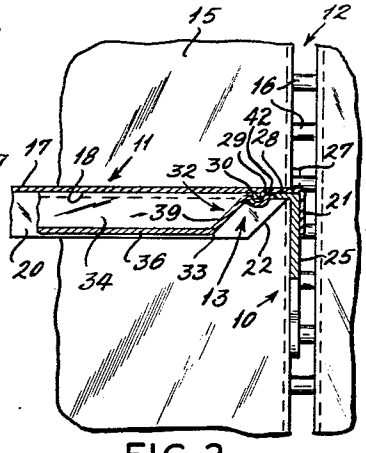


FIG. 3

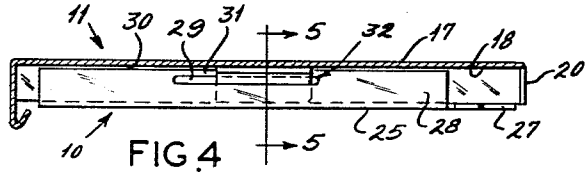


FIG. 4

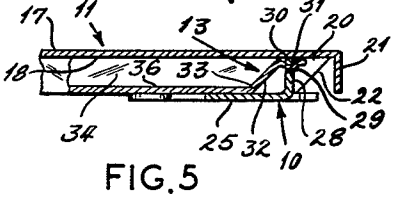


FIG. 5

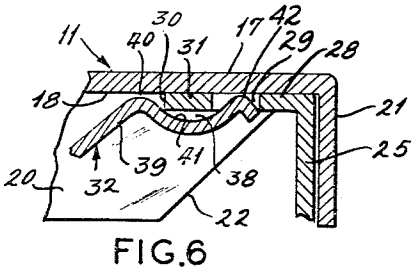


FIG. 6

INVENTOR:
WALTER G. SMITH
By Gravely, Lieder & Woodruff
ATTORNEYS.

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SHELF CONSTRUCTION

Walter G. Smith, St. Louis, Mo., assignor to Hussmann Refrigerator Co., St. Louis, Mo., a corporation of Delaware

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8 Claims. (Cl. 211—93)

This invention relates generally to shelf constructions and more particularly to a bracket support for a shelf.

An object of the present invention is to provide a simple and inexpensive construction for releasably mounting a shelf on a supoprting structure. More specifically, it is an object to provide brackets for supporting the shelf, and retaining means for releasably securing the brackets to the shelf in a manner that permits the brackets to be moved between a vertical shelf supporting position and a folded position for shipping or storage of the shelf and brackets.

Another object is to provide a bracket adapted to be assembled on a shelf without requiring tools or permanent fastening means, the bracket also being removable from the shelf without the use of tools.

Another object of the invention is to provide a spring hinge construction for mounting brackets on a shelf and for retaining the brackets in either shelf supporting or folded position thereon.

These and still other objects and advantages will become apparent hereinafter.

Briefly, the present invention comprises in combination with a shelf, a bracket having a side wall with a margin adapted to be engaged on a supporting structure, a flange connected to the side wall and having an opening therein, and means connected to the shelf and having a free end releasably received in the opening of the flange of the bracket for securing the bracket to the shelf.

The invention also consists in the parts and in the combinations and arrangements of parts hereinafter described and claimed. In the accompanying drawing which forms a part of this specification and wherein like numerals refer to like parts wherever they occur:

Fig. 1 is a perspective view of a shelf construction embodying the present invention,

Fig. 2 is a side elevational view, partly in section, of the shelf construction showing the bracket in shelf supporting position,

Fig. 3 is a cross-sectional view taken substantially along line 3—3 of Fig. 2,

Fig. 4 is a side elevational view, partly in section, showing the bracket and shelf in folded shipping position,

Fig. 5 is a cross-sectional view taken substantially along line 5—5 of Fig. 4, and

Fig. 6 is a greatly enlarged cross-sectional view of the keeper member and bracket member.

Referring now to the drawings, the invention is embodied in a bracket construction 10 for mounting a shelf 11 on an upright structure 12 and in a retaining or keeper member 13 for releasably securing the bracket 10 to the shelf 11.

The upright structure 12 is of conventional construction and includes a substantially vertical wall or panel 15 forming a backing for the shelf 11. A column of horizontally-extending vertically-spaced pins 16 or the like may be provided at each end of the panel 15, or the

panel may be interrupted by an intermediate column of pins (not shown), if desired. The pins 16 are equally spaced so that vertical adjustment of the shelf 11 is permitted.

The shelf 11 is formed of suitable material, preferably metal, and includes a longitudinal body having upper and lower surfaces 17 and 18 and a downturned front flange 19 adapted to support a price tag moulding (not shown) for listing the prices of merchandise to be supported on the upper surface 17 of the shelf. The shelf also has a downturned rear flange 20 and end flanges 21. The ends of the rear flange 20 adjacent to the end flanges 21 are preferably notched or cut away as at 22 to receive the bracket member 10.

The brackets 10 and retaining members 13 are employed in pairs to support the shelf 11 on the upright structure 12, but inasmuch as they are identical only one will now be described. The bracket member 10 is preferably formed of strong rigid metal and includes a first wall 25 having a rearward margin contoured to provide spaced recesses 26 adapted to accommodate three adjacent pins 16 of the upright structure 12. The rearward margin also includes a lock finger 27 adapted to extend behind the pin 16 immediately above the pins received in the recesses 26. It is apparent that the bracket member 10 can be quickly engaged on the pins 16 or removed and adjusted thereon. When the bracket member 10 is engaged with the upright structure 12 in shelf-supporting position, the first wall 25 is in a vertical position.

The bracket member 10 is assembled on the shelf 11 quickly and efficiently without requiring the use of tools. In assembled position, the vertical or first wall 25 of the bracket is adjacent to and substantially parallel with the end flange 21. As shown best in Fig. 3, the wall 25 is relatively thin and is permitted to project rearwardly beyond the shelf 11 with the locking finger 27 and recesses 26 in position to engage the pins 16 by reason of the notch 22 cut in the rear flange 20 of the shelf.

A second wall or flange 28 is connected to or formed integral with the first wall 25 at the upper margin of the latter, the second wall 28 extending from the first wall at a substantially right angle. The second wall is provided with an opening preferably in the form of an elongated slot 29 having a predetermined length, the slot 29 being formed in spaced relation with the free edge 30 of the second wall 28 to define a bar 31 therebetween. The slot 29 also extends substantially parallel with the first wall 25. When the first wall 25 is engaged with the pins 16, the second wall 28 is in horizontal shelf-supporting position. The retaining member 13 is provided to releasably retain the bracket 10 in assembly with the shelf 11, as will now be described.

Referring particularly to Figs. 1, 3 and 6, the retaining member 13 comprises a clip member 32 having one end 33 secured to the underside of the shelf 11 in any suitable manner. In the present embodiment, a channel-shaped member 34 is provided and includes outwardly turned flanges 35 secured to the shelf 11 by spot welds 36 or the like. The end 33 of the clip member 32 is connected to or formed integral with the bottom-defining wall 37 of the channel member 34 and is spaced below the lower surface 18 of the shelf 11. The other or free end of the clip member 32 is stamped or otherwise formed to define a channel 38 extending transversely of the shelf 11 or substantially parallel with the elongated slot 29 in the bracket member second wall 28.

For purposes of disclosure, the present embodiment of the clip member 32 includes a spring leaf portion 39 (Fig. 6) extending angularly upwardly from the bottom wall 37 of the channel member 34 and having a first

abutment ridge 40 adapted to be positioned in juxtaposition with the lower surface 18 of the shelf 11. A channel defining portion 41, which defines the channel 38, is formed integral with the first abutment ridge 40 and also with a second abutment ridge 42. The second ridge comprises an arcuate lip normally positioned in juxtaposition with the underside of the shelf 11.

As shown best in Fig. 6, the ridges 40 and 42 of the clip member 32 are normally biased toward abutting relationship with the lower surface 18 of the shelf 11 by the spring leaf portion 39 of the clip. Although actual abutment of the ridges 40 and 42 with the surface 18 of the shelf is not essential, the distance between the ridges 40, 42 and the shelf surface 18 must be less than the thickness of second wall 28 of the bracket. The arcuate lip or ridge 42 is movable away from the shelf 11 so that the bar 31 of the bracket member 10 may be positioned in the channel 38 with the arcuate lip 42 positioned in the elongated slot 29 of the bracket member. The abutment ridges 40 and 42 form stops or abutments limiting movement of the bracket and the shelf 11. The arcuate lip 42 preferably is shorter than the slot 29 by a predetermined dimension, which dimension is greater than the distance that the rear margin of the bracket member first wall 25 projects rearwardly beyond the rear flange 20 of the shelf 11 when the bracket is engaged with the upright structure 12. Accordingly, when the bracket 10 is disengaged from the upright structure 12, it may be moved transversely relative to the shelf 11 so that the entire bracket may be positioned between the front and rear flanges 19 and 20 of the shelf. The bracket 10 then may be folded into a flat shipping position relative to the shelf in which the first wall 25 of the bracket 10 is substantially parallel with the lower surface 18 of the shelf, Figs. 4 and 5.

If desired, the width of the bar 31 between the free margin 30 of the bracket member second wall 28 and the adjacent edge of the slot 29 is predetermined and the thickness of the bar 31 may also be predetermined so that the dimension of the diagonal of the bar 31 is greater than the normal distance between the shelf surface 18 and the bottom of the channel defining member 41 of the clip 32. Therefore, the bracket 10 cannot be turned between folded shipping and unfolded shelf supporting positions without exerting a pressure between the lower surface 18 of the shelf and the channel defining portion 41 of the clip member so that the clip member 32 has to move away from the shelf. Accordingly, the bracket member 10 will be maintained in either folded or shelf supporting position by the force of the spring portion 39 until the bracket 10 is manually moved to the other of its positions.

The free margin of the arcuate lip 42 of the clip member 32 is spaced from the lower surface of the shelf a distance greater than the thickness of the bar 31 of the bracket member whereby the free margin 30 of the bar 31 may be applied against the lip 42 so that the bracket may be assembled on the shelf without requiring the use of tools. Similarly, the bracket 10 may be removed from the clip member 32 by forcing the arcuate lip 42 away from the shelf 11 by forcing the bracket against the inner abutment surface of the lip 42.

It is now apparent that the present invention greatly facilitates shipping and storage problems inasmuch as assembled shelves and brackets may be folded into flat condition. The present invention also provides a simplified construction that is easily assembled and adjustable to a fine degree. Accordingly, a plurality of shelves of the present construction may be employed in a merchandising display and obtain the optimum utilization of available space regardless of the products being displayed.

It is to be understood that the foregoing description and accompanying drawings are given only by way of illustration and example, and that changes and modifications in the present disclosure, which will be readily apparent to all skilled in the art, are contemplated as within the scope of the present invention which is limited only by the claims which follow.

What I claim is

1. In a shelf construction including a shelf and a bracket, retaining means for mounting the bracket on the shelf in either a folded shipping position or an unfolded shelf supporting position, said retaining means comprising a spring clip member having an end secured to the shelf and a free end with a lip in juxtaposition to the shelf, said bracket having an opening in which said lip is positioned to retain the bracket on the shelf in one of said two positions.

2. A shelf construction comprising a shelf, a bracket slidably and pivotally mounted on said shelf, said bracket having a flange positioned in surface contact with the lower surface of the shelf in shelf supporting position, said flange having an elongated opening therein, and retaining means having a first portion retained on said shelf and having a spring urged end portion positioned in said opening of said bracket in juxtaposition with the lower surface of the shelf, said bracket being adapted to pivot about said end portion of said retaining means between a position in which the flange is substantially perpendicular to said shelf and the shelf supporting position.

3. In a shelf construction including a shelf adapted to be supported on an upright structure, a bracket having a first wall engageable with the upright structure and a second wall at right angles to said first wall, said second wall having an elongated slot extending substantially parallel with said first wall, and means for releasably retaining said bracket on the shelf, said retaining means comprising a clip member having one end retained on the shelf, the other end of said clip member having a predetermined length smaller than the length of said elongated slot and being positioned in the slot in juxtaposition with the shelf to retain the bracket on said shelf.

4. The shelf construction according to claim 3 wherein the first wall has marginal attachment means engageable with the upright structure, the marginal attachment means extending beyond the rear margin of the shelf in position to engage the upright structure a distance less than the difference between the lengths of said other end of the clip member and the elongated slot.

5. The shelf construction according to claim 4 wherein said bracket has a predetermined overall dimension smaller than the transverse shelf dimension between its front and rear margins, and said bracket is adapted to be moved relative to said clip member to be positioned between the front and rear shelf margins.

6. In a shelf construction including a shelf and a bracket having a first wall engageable with an upright support and a second wall for supporting the shelf, the improvement which comprises retaining means for releasably locking said bracket on said shelf, said retaining means including a clip member having one end retained on said shelf and another end movable relative to said shelf, yieldable means interconnecting said ends of said clip member and biasing said other end toward a position adjacent to the shelf, said second wall of said bracket having an elongated recessed portion receiving the other end of the clip member to maintain the bracket in juxtaposition with said shelf.

7. In a shelf construction including a shelf and a bracket having a first wall engageable with an upright support and a second wall for supporting the shelf, the improvement which comprises retaining means including a clip member with a first end portion secured in fixed spaced relation to the lower surface of the shelf and a free end portion movable toward and away from the lower surface of the shelf, and a spring portion connecting said end portions of said clip member and biasing the free end portion toward said shelf, said free end portion having a channel shape with an arcuate abutment lip, and said second wall of said bracket having an elon-

gated slot receiving the arcuate lip of the free end portion therein.

8. In a shelf construction including a shelf and a bracket having a first wall engageable with an upright support and a second wall for supporting the shelf; the improvement which comprises retaining means for releasably mounting the bracket on the shelf, said retaining means including a clip member having a first portion connected to the shelf, a second portion engaged with the bracket and a spring portion connecting said first and second portions, said second wall of the bracket having an opening in which the second portion of said clip member is positioned, said second portion also including an arcuate abutment in contact with the bracket adjacent to the opening therein.

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