

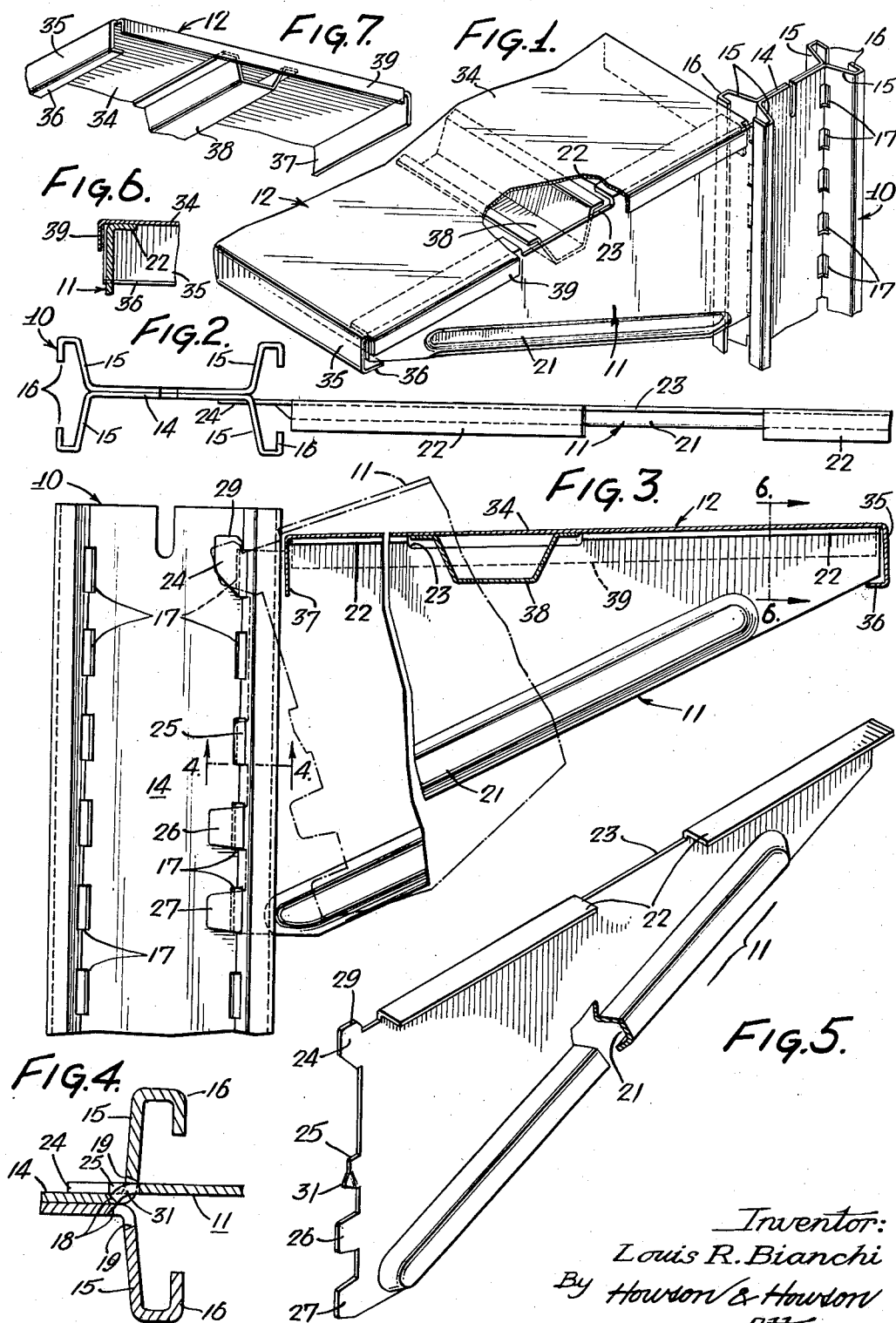
July 29, 1958

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2,845,187

SHELF ASSEMBLY

Filed Jan. 19, 1955



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2,845,187

SHELF ASSEMBLY

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Application January 19, 1955, Serial No. 482,900

4 Claims. (Cl. 211—136)

The present invention relates to a structural support for shelves and the like and more particularly to a supporting bracket assembly which is adapted for simple adjustment as to height.

The present invention has particular application to the construction of shelving in knock-down structures and contemplates a supporting bracket for use with a specially formed upright or standard which is of simple construction and may be formed by a simple stamping operation, and yet is of substantial rigidity both when assembled to the upright and when disassembled for storage.

More specifically the invention contemplates a supporting bracket which is cooperable with an upright having a series of equally spaced apart apertures, the bracket being engageable with selected apertures in the upright by simple tilting and locking movement, and operable to be held against transverse movement by a member on the bracket engageable against the upright.

These and other objects of the invention and the various features and details of the construction thereof are more fully set forth hereinafter with reference to the accompanying drawing wherein:

Fig. 1 is a perspective view of the shelf assembly, with a portion of the shelf broken away to illustrate the construction thereof.

Fig. 2 is a plan view of the assembly with the shelf removed.

Fig. 3 is an elevational view showing the operation of a bracket in broken lines.

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 3.

Fig. 5 is a detached perspective view of the bracket member made in accordance with the present invention.

Fig. 6 is an enlarged sectional view taken on the line 6—6 of Fig. 3, and

Fig. 7 is a detached perspective view of a portion of the shelf itself showing its construction.

In accordance with the invention the shelf assembly comprises an upright 10, a bracket 11 and a shelf member 12. The upright comprises a vertical flat base member 14 having at each of its opposite side edges a pair of outwardly projecting flanges 15, 15. The outer extremities of the flanges 15 are turned back as indicated at 16 to provide therebetween a vertical channel. Along the junction line of the base 14 and each flange 15 is disposed a series of elongated apertures 17 each defined by a side wall 18 on the base member 14 and an opposed side wall 19 in the flange 15. The apertures 17 are equally spaced apart along the junction between the base 14 and the flange 15 and are adapted to receive projecting fingers of the bracket 11 as described more fully below.

The bracket member 11 is supported against vertical and lateral displacement in the apertures 17 of the upright 10. To this end the bracket is formed from a generally triangular piece of sheet material, for example sheet metal. Along the hypotenuse of the triangle a reinforcing rib 21 is pressed out, and along the horizontally disposed side, the bracket is provided with a horizontally projecting

flange 22. A cut-out 23 is made centrally of the flange 22 for a purpose more fully set forth hereinafter.

The vertically disposed base of the triangular bracket is formed with a plurality of fingers 24, 25, 26 and 27, respectively. The fingers project outwardly from the bracket coplanar with the body thereof as clearly shown in Fig. 5. The upper finger 24 is provided with a vertically extending projection 29 which is adapted to engage behind the flange 15 when the finger 24 is inserted in an aperture 17 of the upright 10. The finger 25, which is disposed centrally of the base, is offset laterally as indicated at 31 to form a lug for seating against the side edge 18 of the aperture 17 when the finger 25 is disposed in the aperture 17. The lug 31, as shown in Fig. 4, operates to prevent clockwise movement in a horizontal plane of the bracket 11 in the apertures 17 or counterclockwise in case of other hand bracket. It should be noted that the finger 25 is shorter than the fingers 24, 26 and 27 so that it does not pass completely through the aperture 17 when the bracket is in position on the upright 10. The lower fingers 26 and 27 are generally rectangular in shape and fit neatly within the apertures 17 as shown in Fig. 3, the outer surface of the fingers lying flush against the base 14 of the upright 10 and the inner surface adjacent the body of the bracket 11 abutting the side edge 19 of the recess. Thus, the fingers 26 and 27 effectively preclude counterclockwise rotation of the bracket as shown in Fig. 4 or clockwise in case of other hand.

In the assembly of the bracket 11 to the upright 10, the upper finger 24 is inserted into an aperture 17 as indicated in broken lines in Fig. 3. The bracket is then brought downwardly to engage the fingers 25, 26, and 27, respectively, into lower apertures in the upright. When thus engaged, the bracket is firmly assembled to the upright and held against lateral displacement.

Following assembly of the bracket to the upright, the shelf 12 is assembled on the bracket 11. To provide against inadvertent disassembly of the shelf, the shelf is formed as shown in Fig. 7. As shown, the shelf comprises a substantially flat horizontal body member 34 having at its exposed edge a depending flange 35 with an intumed lip 36. At the opposite edge, a downturned flange 37 is provided. Intermediate the flanges 35 and 36, a channel member 38 is welded or otherwise secured to the body member 34 on the undersurface thereof to provide firm support for the shelf along its length and prevent distortion thereof under load. A second channel member may be employed if desired. At each of the opposite ends of the shelf 12, an integral vertical flange 39 depends therefrom.

When the shelf is properly assembled on the bracket, the intumed lip 36 of the depending flange 35 is adapted to seat under the hypotenuse of the triangular base member 11 (see Figs. 3 and 6). The flange 37, on the other hand, seats behind the flange 22 of the bracket 11 to prevent outward displacement of the shelf from the bracket. The channel member 38 seats in the cutout 23 in the flange 22 as clearly illustrated in Fig. 1. To guard against longitudinal displacement of the shelf relative to the bracket, the flange 39 seats behind the base of the bracket 11. Thus, the shelf is constrained against longitudinal movement by engagement of the channel member 38 at one side of the base of the bracket and the flange 39 at the other side.

In the assembly of the shelf to the bracket, the lip 36 is engaged under the outer extremity of the bracket and the shelf is rocked downwardly to engage the flange 37 behind the inner extremity of the flange 22 and against the outer face of the intumed portion 16. It is noted that the flange 37 when engaged behind the flange 22, prevents upward rocking movement of the bracket on the

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finger 24 by reason of the engagement of the flange 37 with the intumed portions 16 of the flange 15 of the upright 10. In this manner, the assembly cannot become inadvertently dismantled. To dismantle the assembly, the shelf must first be removed from the bracket and then the bracket removed from the upright by rocking the bracket upwardly as indicated in broken lines in Fig. 3. The flange 22 as shown in Fig. 2 is sufficiently narrow to pass between the portions 16, 16.

While a particular embodiment of the present invention has been herein illustrated and described, it is not intended to limit the invention to such a disclosure but changes and modifications may be made therein and thereto within the scope of the following claims.

I claim:

1. In a shelf assembly, an upright composed of a vertical base portion having along one edge thereof an outwardly projecting flange, wall means along the juncture of said flange with said base portion defining a series of apertures each having one edge disposed in the flange and the opposite edge disposed in the base portion, the wall defining said opposite edge being disposed at an obtuse angle to the outer surface of said vertical base portion, and a bracket member engaged with said upright and having means to prevent lateral displacement thereof in the plane of said base portion, said means including one finger formed with a lug laterally offset a distance less than the thickness of said vertical base portion engaged with the said opposite edge wall of a selected aperture to prevent lateral displacement of the bracket in one direction, and a second finger formed to project through a second aperture with its one surface engaged flush against said base portion and with its opposite surface abutting the said one side edge of the aperture to prevent lateral displacement of said bracket in the other direction.

2. In a shelf assembly, an upright composed of a vertical base portion having along one edge thereof an outwardly projecting flange, wall means along the juncture of said flange with said base portion defining a series of apertures each having one edge disposed in the flange and the opposite edge disposed in the base portion, the wall defining said opposite edge being disposed at an obtuse angle to the outer surface of said vertical base portion, and a bracket member engaged with said upright and having a corresponding series of fingers engaged with said apertures, one of said fingers having a projection engaged behind said flange, a second of said fingers having a lug laterally offset a distance less than the thickness of said vertical base portion engaged with the said opposite edge wall of its associated aperture to prevent lateral displacement of the bracket in one direction, a selected finger of said series projecting from said bracket coplanar with the body portion thereof and extending through one of said apertures with its one surface engaged flush against said base portion and with its opposite surface abutting the said one side edge of the aperture to prevent lateral displacement of said bracket in the other direction.

3. In a shelf assembly, an upright composed of a vertical base portion having along one edge thereof an out-

wardly projecting flange, wall means along the juncture of said flange with said base portion defining a series of apertures each having one edge disposed in the flange and the opposite edge disposed in the base portion, the wall defining said opposite edge being disposed at an obtuse angle to the outer surface of said vertical base portion, and a bracket member engaged with said upright and having a corresponding series of fingers engaged with said apertures, the uppermost one of said fingers having an upstanding projection engaged behind said flange, a second of said fingers having a lug laterally offset a distance less than the thickness of said vertical base portion engaged with the said opposite edge wall of its associated aperture to prevent lateral displacement of the bracket in one direction, and a third finger projecting from said bracket coplanar with the body portion thereof and extending through its associated aperture with its one surface engaged flush against said base portion and with its opposite surface abutting the said one side edge of the aperture to prevent lateral displacement of said bracket in the other direction.

4. A shelf assembly according to claim 3 wherein the flange of said upright terminates in an intumed shelf-bearing surface portion disposed normal to said base portion and spaced outwardly from said junction thereof with the flange, said bracket comprising a projecting portion in horizontal alignment with said uppermost finger spaced outwardly from the upstanding projection of said finger a distance corresponding to the spacing of said intumed portion from said junction, said projecting portion of the bracket clearing said intumed portion upon upward pivotal movement of said bracket on said uppermost finger when mounting the bracket on the upright, said assembly including a shelf having at its outer edge a depending flange and intumed lip engaged below the outer extremity of said bracket and having at its inner edge a depending flange bearing at one surface against the projecting portion of said bracket and at its opposite surface against the shelf-bearing surface portion of said upright whereby said second flange locks the bracket and shelf against upward pivotal movement on said uppermost finger.

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