May 14, 1963 A. G. LOZIER 3,089,675

MULTIPLE ANGLE SHELF BRACKET

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Fig . 1

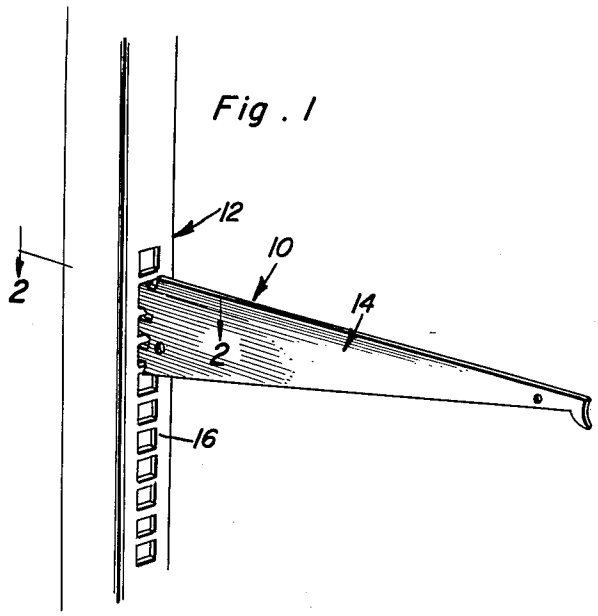



Fig . 2

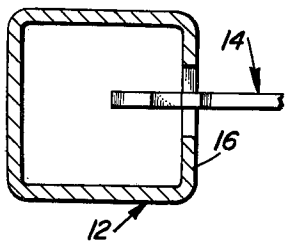



Fig . 3

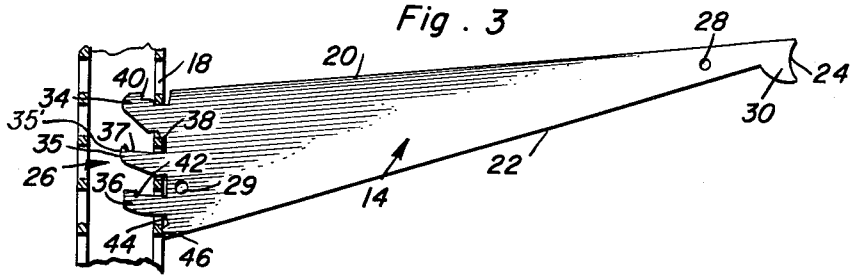



Fig . 4

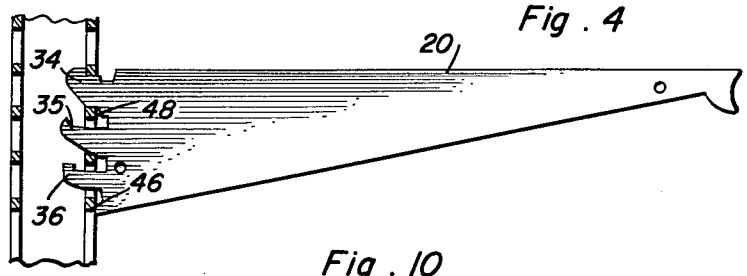



Fig . 9

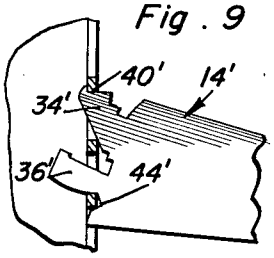
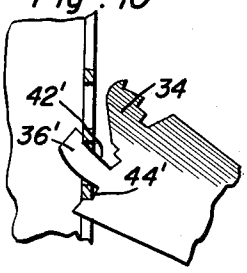



Fig . 10




Allan G. Lozier

INVENTOR.

BY Thomas A. O'Brien and Harvey B. Jackson

Attorneys

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MULTIPLE ANGLE SHELF BRACKET

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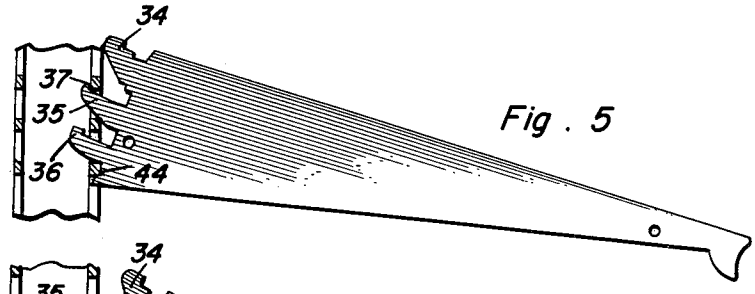



Fig . 5

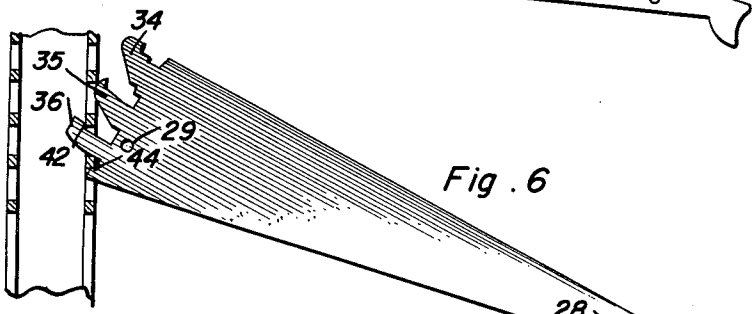



Fig . 6

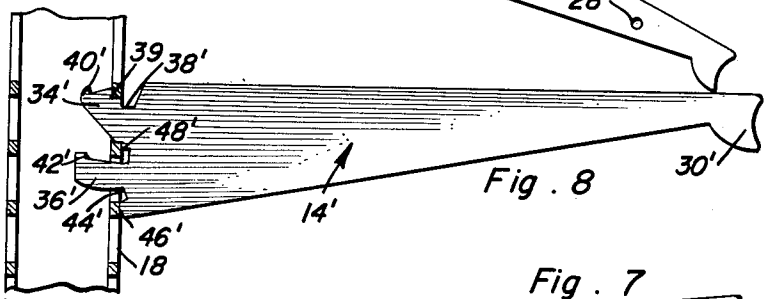



Fig . 8

Fig . 7

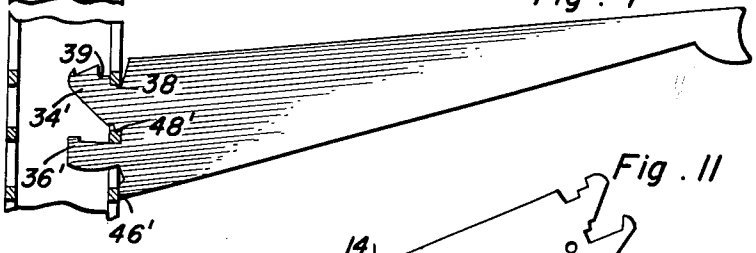
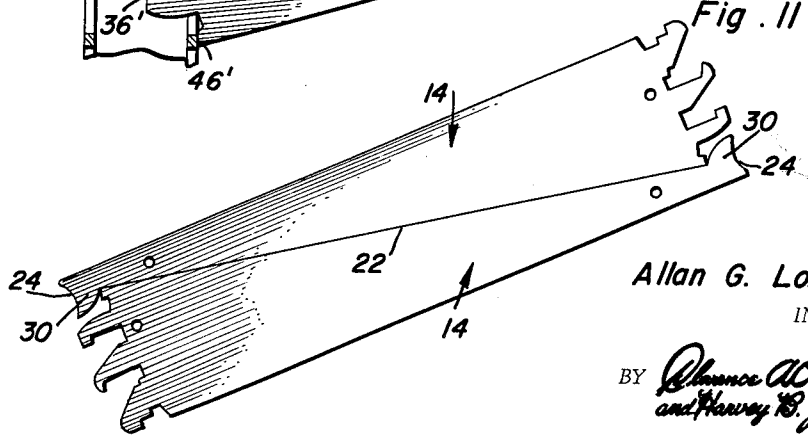



Fig . 11




Allan G. Lozier

INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

United States Patent Office 3,089,675 Patented May 14, 1963



3,089,675

# MULTIPLE ANGLE SHELF BRACKET

Allan G. Lozier, 3307 Curtis St., Omaha, Nebr.

Filed May 23, 1962, Ser. No. 196,988
6 Claims. (Cl. 248—242)

This invention relates to a vertically and angularly adjustable shelf supporting assembly and is a continuation-in-part of allowed prior co-pending application Serial No. 55,692, filed September 13, 1960, now abandoned.

It is a primary object of this invention to provide an adjustable shelf-supporting assembly especially useful in shelf-service stores wherein it is often necessary and desirable to vary shelf arrangements both as to vertical and angular disposition.

Another object of this invention in accordance with the foregoing object is to provide an adjustable shelf-supporting assembly which may be assembled and re-assembled at any selectively adjustable position without any adjustment mechanism or hardware.

A further object of this invention in accordance with the foregoing objects, is to provide a shelf supporting assembly comprising a minimum of parts which may be readiiy packed and stored when not in use.

A still further object of this invention is to provide an adjustable shelf-supporting assembly which may be adjusted by simple manipulations of the projecting shelf-supporting bracket member relative to the vertical post supporting member at a plurality of different angles with respect to the supporting member.

An additional object of this invention in accordance with the foregoing objects, is to provide a shelf-supporting bracket member adjustably positioned at various angles with respect to the vertical supporting posts, which supporting bracket member is effectively locked in each of its angular supporting positions.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part thereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of a typical assembly of vertical supporting posts and shelf-supporting bracket member made in accordance with this invention.

FIGURE 2 is a partial transverse sectional view taken substantially through a plane indicated by section line 2—2 of FIGURE 1.

FIGURE 3 is a longitudinal sectional view through the vertical post member illustrating the positioning of the shelf bracket member at a first angle position.

FIGURE 4 is a view similar to FIGURE 3 but illustrating the shelf bracket member in a second right-angle position.

FIGURES 5 and 6 are used similar to that of FIGURES 3 and 4 but illustrating the shelf bracket member in third and fourth angle positions respectively.

FIGURES 7 and 8 are longitudinal sectional views through the vertical post member illustrating another form of shelf bracket member in first and second angle positions corresponding to the positions illustrated in FIGURES 3 and 4.

FIGURES 9 and 10 are partial sectional views illustrating the form of bracket member shown in FIGURES 7 and 8, in third and fourth angle positions corresponding to the angle positions illustrated in FIGURES 5 and 6 with respect to the first form of bracket member.

FIGURE 11 is a side elevational view of a pair of shelf bracket supporting members in stacked position when in disuse or in storage.

Referring now to the drawings in detail, it will be observed that the shelf-supporting assembly generally



indicated by reference numeral 10 in FIGURE 1 includes a vertical tubular post member 12 on which a plurality of projecting shelf bracket members 14 may be assembled. It will also be observed that each of the supporting shelf bracket members 14 may be vertically positioned along the tubular post 12 and may be angularly positioned with respect thereto at four different angles as can be seen from FIGURES 3, 4, 5 and 6.

The tubular post member 12 as illustrated in FIGURES 1 and 2, is rectangular in cross section and has at least one side 16 provided with a plurality of vertically spaced longitudinal apertures 18. It will be appreciated that different tubular cross-sectional configurations for the vertical post member 12 may be adopted as desired as long as the tubular post member presents a load supporting side 16 upon which a plurality of shelf-supporting bracket members 14 may be positioned. It will also be apparent from FIGURES 3 through 6 that the tubular member 12 may have more than one load supporting side thereon. Accordingly, in FIGURES 3 through 6, the vertically spaced apertures 18 are shown provided on two opposite sides of the tubular post member 12.

Referring once again to FIGURES 3 through 6, it will be observed that the shelf supporting bracket member 14 includes an upper edge 20 upon which the shelf may be supported and a lower edge 22 disposed at an angle relative to the upper edge 20 in order to taper the member towards its narrow end 24 while at the opposite wider end a bracket mounting formation generally referred to by reference numeral 26, is formed. The bracket member 14 has formed therein joining alignment holes 28 and 29 whereby laterally spaced shelf bracket members may be aligned on adjacent supporting posts and interconnected. It will also be observed that disposed at the narrow ends 24 of the bracket member, is a projection 30 so arranged as to maintain a pair of bracket members 14 assembled, with lower edges 22 abutting as illustrated in FIGURE 11. A pair of bracket members may thus interfit with each other for more convenient storage when not in use.

At the wider end of the bracket member 14, the bracket mounting formation 26 is provided with a pair of vertically spaced projections 34 and 36 and an intermediate projection 35, said projections being insertable through adjacent apertures 18 in the tubular post member 12. The projection 34 has disposed on an upper edge thereof, a pair of hook recesses 38 and 40 respectively engageable with a portion of the post through an opening 18 therein to position the bracket member in a first and second angle position as illustrated in FIGURES 3 and 4 respectively. The intermediate projection 35 is provided with a hook recess 37 on its upper edge engageable with a portion of the post through an opening 18 adjacent to and below the opening through which projection 34 extends in order to position the bracket member in a third angle position as illustrated in FIGURE 5. The lower projection 36 is provided with a recess 42 on its upper edge engageable with a portion of the post through another spaced opening 18 therein in order to position the bracket member in a fourth angle position as illustrated in FIGURE 6. It is therefore apparent that the four hook recesses 38, 40, 37 and 42 may be selectively engageable with an inside surface of the tubular member 12 through apertures 18 in order to position the shelf-supporting bracket member 14 in the four angular positions aforementioned. Disposed below the lower projection 36, are a pair of rest shoulder surfaces 44 and 46. The rest shoulder surface 46 engages or abuts against the post member 12 on the outside thereof between apertures in order to lock the bracket member in the first and second angular positions as illustrated in FIGURES 3 and 4. In order to lock the bracket member 14 in the other two positions

of FIGURES 5 and 6, the shouldered rest surface 44 engages the post member between apertures thereon.

Referring now to FIGURES 7, 8, 9 and 10 in particular, another form of bracket member 14' is illustrated which is also capable of being positioned and locked in four different angular positions corresponding to the positions described with respect to the bracket member 14 illustrated in FIGURES 3 through 6 inclusive. The latter form of bracket member 14' however, is provided with only two projections 34' and 36' projection 36' being structurally similar to the lower projection 36 of bracket member 14 and being therefore provided with a hook recess 42'. The bracket member 14' also is provided with rest surfaces 44' and 46' disposed below the lower projection 36' for locking engagement with portions of the vertical post. Accordingly, the lowermost rest surface 46' engages a portion of the post between apertures 18 in order to lock the bracket member 14' in the first and second angular positions as illustrated in FIGURES 7 and 8. The rest surface 44' on the other hand engages the vertical post in order to lock the bracket member 14' in its third and fourth angular position as illustrated in FIGURES 9 and 10. The upper projection 34' of the bracket member 14' differs from the corresponding projection 34 of the bracket member 14 in that it is provided with three recesses 38', 39 and 40' arranged to respectively engage the post member on an inside surface for positioning of the bracket member in three different angular positions as illustrated in FIGURES 7, 8 and 9. The hook recess 42' and surface 44' respectively engage in adjacent apertures 18 as shown in FIGURE 10 to hold the bracket member in the lowest angular position.

The bracket members 14 and 14' are also respectively provided with step surfaces 48 and 48' disposed below the upper projection for engagement with the outside of the post member in the first and second angular positions for further seating and locking of the bracket members. The step surfaces 48 and 48' will thereby prevent shifting of the bracket member to a lower angular positions.

From the foregoing description, operation and utility of the shelf-supporting assembly of this invention will be apparent. It will therefore be appreciated that the bracket members of this invention may be positively locked in a plurality of angular positions in order to support a shelf thereon at different angles including a first angle position with the upper edge 20 or 20' of the bracket member disposed approximately six degrees above the position thereof when in the second angular position perpendicular to the vertical post member. The lower third and fourth angle positions of the bracket member involve positioning of the upper edge at approximately seventeen degrees and thirty degrees below the perpendicular position. Furthermore, it will be appreciated that adjustment may be effected without any complicated adjustment mechanism or hardware by simple manipulation of the bracket member when assembling it within the supporting tubular post member.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. In a shelf supporting assembly including an upright post having a plurality of vertically spaced openings formed therein, elongated shelf supporting means in the form of an elongated shelf bracket member, said shelf bracket member having a pair of longitudinally extending and transversely spaced projections formed on one end thereof and a pair of abutment shoulder surfaces facing generally in the direction in which said projections extend, disposed adjacent one of said projections and on the side thereof remote from the other projection, said one projection including a hook recess having a surface facing toward the other end of said bracket member and away from said shoulder surfaces, said other projection including a pair of hook recesses having surfaces facing toward the other end of said bracket member and away from said shoulder surfaces selectively engageable with the portions of said post defining one of said openings for positioning the bracket member at a first and second angle, said first mentioned recess selectively engageable with portions of said post defining an opening adjacent said one opening for positioning the bracket member at a third angle, one of said shoulder surfaces abutting against said post when said bracket member is positioned at said first angle while the other of said shoulder surfaces abuts against said post when said bracket member is positioned at the second or third angle.

2. The combination of claim 1 wherein said projections are simultaneously receivable in adjacent ones of said openings.

3. The combination of claim 1 wherein each of said shelf bracket members is plate-like in configuration.

4. In a shelf supporting assembly including an upright post having a plurality of vertically spaced openings formed therein, elongated shelf supporting means in the form of an elongated shelf bracket member, said shelf bracket member having a pair of longitudinally extending and transversely spaced projections formed on one end thereof and a pair of abutment shoulder surfaces facing generally in the direction in which said projections extend, disposed adjacent one of said projections and on the side thereof remote from the other projection, said one projection including a hook recess having a surface facing toward the other end of said bracket member and away from said shoulder surfaces, said other projection including a plurality of hook recesses having surfaces facing toward the other end of said bracket member and away from said shoulder surfaces selectively engageable with the portions of said post defining one of said openings for positioning the bracket member at a plurality of angles, said first mentioned recess selectively engageable with portions of said post defining an opening adjacent said one opening for positioning the bracket member at an additional angle, one of said shoulder surfaces abutting against said post when said bracket member is positioned at the additional angle.

5. In a shelf supporting assembly including an upright post having a plurality of vertically spaced openings formed therein, elongated shelf supporting means in the form of an elongated shelf bracket member, said shelf bracket member having a pair of longitudinally extending and transversely spaced projections formed on one end thereof and a pair of abutment shoulder surfaces facing generally in the direction in which said projections extend, disposed adjacent one of said projections and on the side thereof remote from the other projection, said one projection including a hook recess having a surface facing toward the other end of said bracket member and away from said shoulder surfaces, said other projection including a pair of hook recesses having surfaces facing toward the other end of said bracket member and away from said shoulder surfaces selectively engageable with the portions of said post defining one of said openings for positioning the bracket member at a first and second angle, said first mentioned recess selectively engageable with portions of said post defining an opening spaced from said one opening for positioning the bracket member at a fourth angle, one of said shoulder surfaces abutting against said post when said bracket member is positioned at the said first and second angles, and an intermediate projection engageable with said post through an opening disposed between said first mentioned spaced openings for positioning the bracket member at a third angle, the other of said shoulder surfaces abutting against said post when

said bracket member is positioned at said third or fourth angle.

6. In a shelf supporting assembly including an upright post having a plurality of vertically spaced openings formed therein, elongated shelf supporting means in the form of an elongated shelf bracket member, said shelf bracket member having a pair of longitudinally extending and transversely spaced projections formed on one end thereof and a pair of abutment shoulder surfaces facing generally in the direction in which said projections extend, disposed adjacent one of said projections and on the side thereof remote from the other projection, said one projection including a hook recess having a surface facing toward the other end of said bracket member and away from said shoulder surfaces, said other projection including a plurality of hook recesses having surfaces facing toward the other end of said bracket member and away from said shoulder surfaces selectively engageable with the portions of said post defining one of said openings for



positioning the bracket member at a first and second and third angle, said first mentioned recess selectively engageable with portions of said post defining an opening adjacent said one opening for positioning the bracket member at a fourth angle, one of said shoulder surfaces abutting against said post when said bracket member is positioned at said first and second angles while the other of said shoulder surfaces abuts against said post when said bracket member is positioned at the third or fourth angle.

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