Sept. 1, 1959 E. W. BERGSTRÖM 2,902,242

ADJUSTABLE SHELF BRACKET ASSEMBLY

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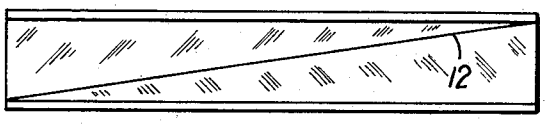


FIG. 5

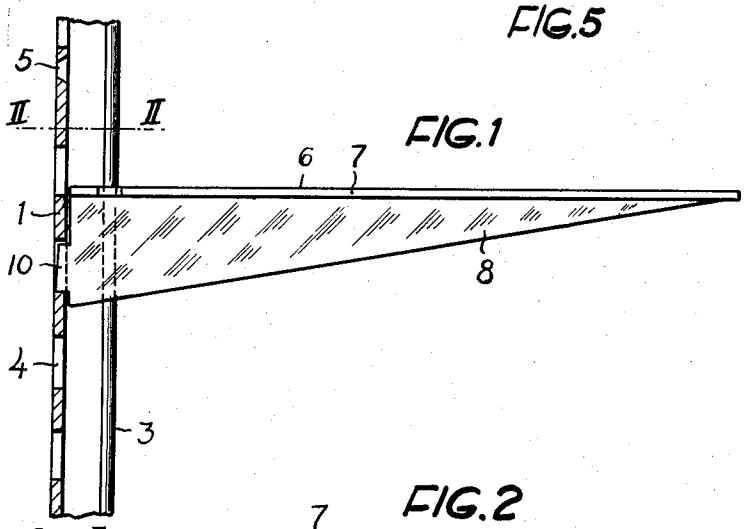


FIG. 1

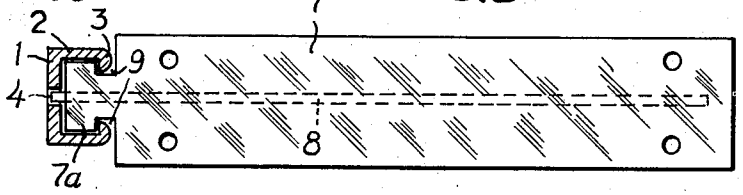


FIG. 2

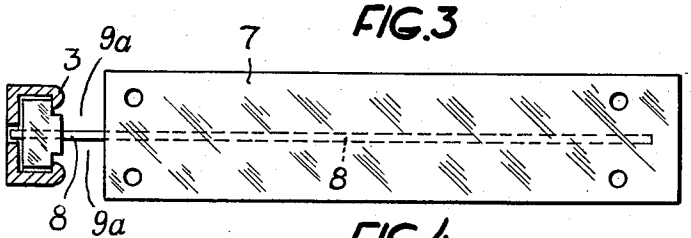


FIG. 3

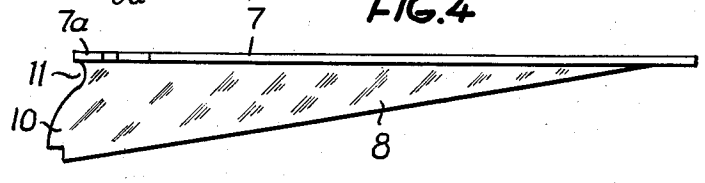


FIG. 4

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ADJUSTABLE SHELF BRACKET ASSEMBLY

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4 Claims. (Cl. 248—244)

The present invention refers to brackets of the type wherein an arm adapted to support objects such as shelves or the like is adjustable into different positions of displacement along a bar of a substantially U-shaped cross section and having guiding fillets or the like arranged on the inside of the flanges thereof, said fillets being adapted to cooperate with laterally directed projections on the end of the arm introduced into the bar to retain the arm between the flanges, said projections also serving as fulcrums in the swinging of the arm to bring an abutment on the same into and out of engagement with abutments or the like on the bar. The arrangement according to the invention is principally distinguished by the feature that at least the end of the arm cooperating with the bar is of a T-shaped cross section, and that the projections are formed by the flange portion of the end of the arm, while the abutment is formed by the web portion thereof, besides which the flange portion of the end of the arm has provided therein recesses extending at a distance from the end of the arm substantially up to the web portion thereof, said recesses being of a width larger than that of the guiding fillets on the inside of the bar flanges, while a recess is also provided underneath the flange in the end edge of the web portion, so as to permit the arm by an oblique positioning thereof to be introduced into and taken out of the bar in a direction at right angles to the same.

The accompanying drawing illustrates forms of embodiment of the invention. Here, Fig. 1 is a section through a bar provided with an arm, and Fig. 2 is a section on line II—II in Fig. 1. Fig. 3 shows in the manner of Fig. 2 a construction of the bracket arm according to the invention, and Fig. 4 shows the arm according to Fig. 3 in elevation. Fig. 5 is an elevation of a bar intended as a blank material for the arms.

In Figs. 1 and 2, **1** designates a bar of a substantially U-shaped cross section, the flanges **2** of the same being formed with fillets **3** along the free edges thereof. Punched into the bottom portion of the bar **1** are elongated holes or recesses **4** and, furthermore, holes **5** for the screwing of the bar onto a wall or the like.

Introduced into the bar **1** is one end of a bracket arm **6**, which is of a substantially T-shaped section; the flange portion of the arm is denoted by **7** and the web portion thereof by **8**. The height of the web portion diminishes outwardly toward the free end of the arm. As will be best seen from Fig. 2, the flange portion **7** of the arm **6** has recesses **9** provided therein, said recesses being engaged by the guiding fillets **3** of the bar. The portion of the flange **7** located within the bar **1** is formed in a manner such as to substantially fill the section of the channel in its entirety.

The edge of the web portion **8** facing the bottom of the bar **1** is formed with a projection **10** engaging one of the holes **4**. The width of the holes **4** substantially corresponds to the thickness of the web portion **8** of the

bar, whereby the arm will be steadily retained in the bar.

When the arm **6** is to be moved up the bar **3** or down the same, it is swung upwardly, the projections **7a** formed by the flange portion **7** and located within the bar then constituting fulcrums for the swinging movements. The projection or abutment **10** on the web portion **8** is then pulled out of the hole **4**, whereupon the arm may be displaced into the desired position along the bar, where it is again swung downwardly, so that the abutment **10** is introduced into the hole **4** provided therein.

The form of embodiment of the arm disclosed in Figs. 1 and 2 is such that the arm will have to be introduced from the end of the bar. Mostly, however, it might be found to be desirable occasionally to remove an individual shelf from a shelf structure, which in such case involves a time-wasting re-grouping of the remaining shelves. To facilitate the introduction of the bracket arm at an arbitrary point of the bar in a direction at right angles to the latter, the arm may be made according to the preferred embodiment shown in Figs. 3 and 4. The constuction according to these latter figures differs from that previously described only in that the recesses **9a** of the flange portion **7** extend substantially as far as to the web portion **8** while being of a considerably larger width than of the guiding fillets **3** on the bar. As will be seen from Fig. 4, a recess **11** is provided immediately underneath the flange **7** in the edge of the bar facing the web portion **8**. Hereby it will be possible to introduce the projections **7a**, which in this case are somewhat shorter than in the embodiment according to Figs. 1 and 2, behind the guiding fillets **3** by the fact that the arm is kept in an upwardly swung position and is somewhat obliquely located relatively to the bar, whereupon the arm is turned into its proper position and is swung downwardly, so that the abutment **10** enters the hole **4**.

In the manufacture of the bracket arms above described, one advantageously starts from a bar having an I-shaped outline, as shown in Fig. 5. This bar is divided into two by means of a diagonal cut **12** so as to provide two blanks for bracket arms of the T-shaped outline in consideration. These blanks are then worked by milling, punching or the like into finished arms. If desired, the working may be undertaken entirely or in part already before the division of the I-shaped bar.

As will appear from the description hereinabove, the bracket according to the invention is very simple to manufacture, and is thus favourable from an economical point of view. The T-shaped section of a web height diminishing toward the free end of the arm is correct from the point of view of strength, for which reason the bracket will endure a very high load. In dependence on the range of use, the lower edge of the web portion **8** may be formed in any suitable manner and consequently need not be straight as in the examples shown, and, besides, the web portion need not extend as far out as to the free end of the arm.

What I claim is:

1. An adjustable shelf bracket assembly comprising in combination a vertical shelf bracket bar of U-shaped cross-section, the web portion of said bar being adapted to be secured contiguously to a fixed support and having a plurality of uniform longitudinally-spaced recesses therein, each of the flanges of said bar having fillets extending longitudinally along the free extremities thereof and directed inwardly toward the median plane of the bar; and a shelf bracket arm arranged substantially at right angles to said bar and being adjustably connected at one end to said bar for relative displacement longitudinally of said bar, the end of said bracket arm connected to said bar having a T-shaped portion positioned intermediate

the flanges of said bar, the web of the arm T-shaped portion having a projection extending longitudinally therefrom and inserted in one of the recesses of said bar web portion and the oppositely directed flange portions of the arm T-shaped portion substantially filling the space defined by the web, flanges, and fillets of the bar, said bracket arm flange portions cooperating with said bar fillets when said bracket arm projection engages one of said bar recesses to rigidly connect said arm to said bar and also serving as fulcrums for upward pivotal movement of the arm to disengage the bracket projection from the bar recess so that the arm may be slidably displaced longitudinally of said bar with the arm T-shaped portion intermediate the bar flanges, the web of said arm T-shaped end portion having a recess intermediate said projection and said bracket arm flanges whereby the arm by an oblique positioning thereof may be introduced into and taken out of the bar intermedaite its ends in a direction substantially at right angles thereto.

2. A shelf bracket arm as defined in claim 1 wherein the thickness of the projection in the lower portion of the web is substantially equal to the width of the longitudinally-spaced recess in the web of the U-shaped bracket bar.

3. A shelf bracket arm as defined in claim 1 wherein said bracket has a T-shaped configuration along its entire width, and further wherein the flanges of the T-shaped arm end portion are separated from the flange portions of the remainder of the arm by recesses each having a width considerably greater than the width of the bar fillets.

4. An adjustable shelf bracket assembly comprising, in combination, a vertical shelf bracket channel having a web portion interconnecting a pair of longitudinal side legs, the web portion of the channel being adapted to be secured to a fixed support and having a plurality of aligned longitudinally spaced apart openings therein, each of the side legs of the channel having near its free end a fillet extending inwardly of the channel, the fillets being spaced apart to define an outwardly facing longitudinal slot in the channel; and a shelf bracket arm connected at one end to the channel and adjustable to different positions displaced longitudinally thereof, said arm including a flat shelf supporting flange having a downwardly extending central web depending therefrom, the web of the arm having a longitudinally extending projection seated within one of the openings in the channel,

said flange being cut away near the end thereof secured to said channel to provide a pair of oppositely arranged notches extending from the opposed side edges of the flange toward the central web of the arm to provide a head for insertion into the channel, said notches respectively receiving the fillets of the channel and said head including surfaces respectively engaging the fillets of the channel, whereby when the shelf supporting flange is loaded said surfaces and said fillets form a first pair of load supporting points while the arm web including the projection cooperates with the web portion of the channel to provide a third load supporting point, said arm being pivotable in a vertical plane about its head to withdraw the projection from said one opening and thereafter to permit vertical movement of the head within the channel in order to adjust the position of the arm, and said arm web having a recess defined in the end portion thereof intermediate the projection and the head, thereby to permit insertion of said arm into the channel at any desired point along the channel intermediate its ends by first aligning the head with the channel slot, then inserting the head through the groove into the channel and then turning the arm about its longitudinal axis with the recess accommodating one of the fillets until the projection reaches a position in alignment with the channel slot at which time the projection may be inserted into one of the openings, said recess also permitting removal of said arm from the channel at any desired point therealong by first pivoting the arm in a vertical plane about its head to withdraw the projection from the opening and thereafter turning said arm about its longitudinal axis with the recess again accommodating one of the fillets until the head is aligned with the channel slot at which time the arm may be withdrawn from the channel.

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