

Improved Shelving

People residing in apartments in general have a tendency to install shelving or the like on their balconies for supporting flower arrangements or other articles to provide a decorative living surrounding. However, where such shelves are permanently installed it proves difficult and sometimes impossible for the residents to remove them without damage when the residents move to different premises. In such cases the shelves have to be left behind.

Attempts have been made to solve the above problems and one known form of shelving comprises a shelf supported by two U-shaped frames which cross one another and are locked by catches and removably attached to the balcony enclosure or railing as is shown in Figure 10. However, this type of shelving is bulky and combersome for both packing and handling and is relatively expensive.

The present invention seeks to provide an improved shelving for a balcony.

Accordingly, the present invention provides a supporting structure for use as shelving on a balcony wall or railing comprising base means for providing a substantially horizontal supporting surface, one side edge of said base means being securable to said wall or railing; slide means

slidably mounted to said base means for movement towards and away from said one side edge, said slide means having means for securing the slide means against sliding movement at preselected locations on said base means; first and second lever means pivotally depending below said base means from respective locations on said slide means, said second lever means being pivoted to said slide means at a location intermediate said first lever means and said one side edge; and engaging means on said first lever means for retentive engagement with said second lever means remote from said slide means whereby said first lever means serves as a third order lever for supporting said base means in a substantially horizontal attitude against the balcony wall or railing.

The present invention is further described hereinafter, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is an exploded view of a support structure according to the present invention;

Figure 2 is a plan view from below of a frame of the structure of Figure 1;

Figure 3 is a perspective view of a modified form of supporting bracket for the structure of Figure 1;

Figure 4 is a perspective view of a further form of supporting bracket for the structure of Figure 1;

Figure 5 is a perspective view of the structure of Figure 1 in assembled form;

Figure 6 is a side elevation of the structure of Figure 1 mounted in a first manner on a supporting wall;

Figure 7 is a view similar to that of Figure 6 showing the structure mounted in a second manner on supporting wall;

Figure 8 is a view similar to that of Figure 6 showing the structure of Figure 1 mounted in a third manner on a supporting wall;

Figure 9 shows an example of a bipod of the structure of Figure 1; and

Figure 10 is a perspective view of a known form of supporting structure.

Referring to the drawings, Figure 1 shows a supporting structure in the form of shelving having a frame comprising hollow section side members 11 to 14 and corner members 3 to 6. Each corner member has two protrusions 31, 32; 41, 42; 51, 52; and 61, 62 which extend at right angles to one another and engage in open ends of the side members to form the frame. Each side member 11 to 14 is formed with an axial slot 112, 122, 132, 142 along its base into which supporting brackets 7 are slotted, the supporting brackets being retained in the slots by guide flanges 71, 72 such that the brackets 7 are slidable along the length of the side members. Each bracket has a protruding flange 73

which extends at right angles, the bracket being generally L-shaped or flat as shown in Figures 3 and 4. The inner lower portion of each side member 11 to 14 is provided with an axially extending notch, 113, 123, 133, 143 into which metal grills 21 or the like are slotted during assembly of the shelving, the grills forming a base of the shelving.

A respective slide member 101, 102 is slidably located in the slot 112, 132 of opposing side members 11, 13, the slide member having a securing block 1011, 1021 extending from the bottom thereof.

A bipod comprising two generally U-shaped tubular members 8, 9 has securing holes 811, 911, 821, 921 provided at the free ends of side bars, 81, 91, 82, 92 of the tubular members 8, 9, and a plurality of projecting lugs 912, 922 provided as shown on the side bars 91, 92 of tubular member 9. The lugs 912, 922 are uniformly spaced along the side bars.

Each tubular member may be formed from tubular sections as shown in Figure 9.

When assembling the structure to the form shown in Figure 5, the grills 21 are slid into the notches, 113, 123, 133, 143 in the frame side members 11 to 14 to form the base 2 and the side members 11 to 14 are joined together using the corner members 3 to 6, thus forming the body 1 of the

shelving.

The lower, larger diameter end 151 of a respective pillar 15 is located vertically into a co-operating hole in the upper surface of each corner member 3 to 6. Cross members 154 are then located on the other, smaller diameter ends 152 of adjacent pairs of the pillars 15 by means of through-holes 1541 adjacent the ends of the cross members such that the two cross members 154 extend parallel to one another along the longer sides of the shelving. The two cross members are supported above the side members 11 to 14 by the shoulders 153 formed on the pillars 15 at the junctions of their larger and smaller diameter portions.

Further cross members 155 are located in a similar manner on adjacent pairs of pillars 15 along the shorter sides of the shelving.

The guide flanges 71, 72 of two or more brackets 7 are located in the slot 122 of one frame side member 12 and are secured to the side member 12 by means of screws passing through the projecting flange 73 and engaging in holes 114, 124, 134, 144 in the side member.

Slide members 101, 102 are located in the slots 112, 132 of the shorter side members 11, 13 and the free ends of the monopod 8 are threadedly engaged with holes 1011 in the

securing blocks 1011, 1021 of the slide members 101, 102 with the free ends of monopod 9 threadably engaged to holes 10211 in the securing blocks 1011, 1021.

In use of the shelving as shown in Figure 6, the brackets 7 are fixed to the upper free edge of the balcony enclosure or railing. The monopod 8 is then located between adjacent pairs of lugs 912, 922 on the monopod 9, the particular pairs of lugs being chosen such that when the lower end of the monopod 9 bears against the balcony enclosure or railing the shelving is supported in a substantially horizontal attitude.

The position of the slide members 101, 102 relative to the frame side members 11, 13, can be altered utilising the holes 114, 134 and the engagement of the monopods 8 and 9 adjusted to take account of variations in the type of balcony enclosure or railing to maintain the shelving in a substantially horizontal attitude.

In addition, with an enclosure having a window frame, the supporting brackets 7 shown in Figure 7 can be used to secure the shelving to the balcony enclosure outside the window frame. The bracket 7 illustrated in Figure 8 can be used to secure the shelving to the side of a wall.

CLAIMS:

1. A supporting structure for use as shelving on a balcony wall or railing comprising base means for providing a substantially horizontal supporting surface, one side edge of said base means being securable to said wall or railing; slide means slidably mounted to said base means for movement towards and away from said one side edge, said slide means having means for securing the slide means against sliding movement at preselected locations on said base means; first and second lever means pivotally depending below said base means from respective locations on said slide means, said second lever means being pivoted to said slide means at a location intermediate said first lever means and said one side edge; and engaging means on said first lever means for retentive engagement with said second lever means remote from said slide means whereby said first lever means serves as a third order lever for supporting said base means in a substantially horizontal attitude against the balcony wall or railing.

2. A supporting structure according to Claim 1 in which said base means comprises side members of hollow form, corner members interconnecting the side members to form a frame and sheet means engaged with the side members to form the supporting surface, one of said side members forming said one edge of the base means and carrying supporting brackets whereby the frame can be secured to the wall or railing, and the pair of side members which are coupled to said one side member carrying slide members respectively which form said slide means, said slide members being slidably mounted in the pair of side



members respectively and being movable towards and away from said one side member.

3. A supporting structure according to Claim 2 in which each side member is of hollow elongated form and has an elongated notch in one side wall to receive an edge of said sheet means and the lower wall of the side member defining a guide slot to receive guide flanges formed on the slide members or supporting brackets.

4. A supporting structure according to Claim 3 in which each corner member has a pair of protrusions for location within the end portions respectively of the adjacent side members.

5. A supporting structure according to Claim 4 in which each supporting bracket carries screws engagable in apertures in the one side member to secure the brackets to the side member.

6. A supporting structure according to Claim 4 in which each slide member carries screws for selective engagement within holes formed in the base walls of the respective one of the pair of side members.

7. A supporting structure according to any one of Claims 2 to 6 in which said first and second lever means are each formed by members of substantially U-shaped form, the free ends of each U-shaped member being pivotally connected to the slide members respectively.

8. A supporting structure according to Claim 7 in which the free ends of the U-shaped member forming the first lever means are secured to the inner faces of the slide



members and the free ends of the U-shaped member forming the second lever means to the outer faces of the slide members.

9. A supporting structure according to Claim 8 in which the limbs of the U-shaped member forming the first lever means are provided with a plurality of spaced lugs to receive the base section of the U-shaped member forming the second lever.

10. A supporting structure substantially as hereinbefore described with reference to Figures 1 to 9 of the accompanying drawings.

