

TITLE

"A MOUNTING SYSTEM"

FIELD OF THE INVENTION

The present invention relates to a mounting system for mounting items to surfaces.

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BACKGROUND OF THE INVENTION

When mounting items such as shelves or other similar furniture to walls, the most common method is to fit one or more support brackets to the wall and then mount the shelf on the top of the brackets.

While the installation of shelves is something that people commonly undertake
10 themselves, installation kits for shelves generally available have a number of drawbacks for those wishing to install shelves in their own homes. Firstly, as most shelf arrangements require the fitting of at least two brackets independently to the wall, the person installing must go through a number of steps to ensure that each bracket is both aligned correctly vertically and positioned horizontally with respect to
15 the previously installed brackets so that the shelf is level.

Also, this type of arrangement results in visible brackets which often can be considered to detract from the appearance of the shelf and foreshorten depth perception of the room. While it is possible to have shelves installed without brackets, this often requires employing a trained tradesperson to construct the shelf and
20 supporting arrangement so that the brackets are hidden.

The present invention attempts to overcome at least in part the aforementioned problems of mounting items, such as shelves, to walls.

SUMMARY OF THE INVENTION

In accordance with one aspect of the present invention there is provided a mounting system for mounting an item to a surface comprising a mounting bracket securable to the surface, a recess on the item for receiving the mounting bracket, the recess being
5 provided in the item on a side to be located adjacent the surface and a securing means for securing the mounting bracket to the item when the mounting bracket is received in the recess.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will now be described, by way of example, with reference to
10 the accompanying drawings, in which:

Figure 1 is a perspective view of a mounting system in accordance with the present invention, in which the item to be mounted comprises a wall shelf;

Figure 2 is an upper perspective view of the shelf of Figure 1;

Figure 3 is an upper perspective view of the mounting bracket of the mounting system
15 of Figure 1;

Figure 4a is a rear perspective view of the mounting bracket received within a recess of the shelf;

Figure 4b is a side view of the shelf mounted to a wall;

Figure 4c is a side cross sectional view of the shelf mounted to the wall;

20 Figure 5 is a front perspective of the shelf secured to the mounting bracket showing the internal connection of the mounting bracket to the shelf;

Figure 6a is an exploded view of the mounting bracket showing installation of support rods to the mounting bracket;

Figure 6b is a side cross-sectional view showing the securing of the shelf to the support rods of the mounting bracket;

Figure 7a is a front view of the mounting bracket of the mounting system of Figure 1;

Figure 7b is a rear view of the mounting bracket of the mounting system of Figure 1;

5 Figures 7c and 7d are end views of the mounting bracket of the mounting system of Figure 1;

Figure 8a is a rear view of the shelf of the mounting system of Figure 1;

Figure 8b is a side cross sectional view of the shelf of Figure 8a through the line A-A;

Figure 9a is a perspective view of a further embodiment of a mounting bracket in
10 accordance with the present invention;

Figure 9b is a perspective view of a further embodiment of the mounting bracket of Figure 1 including a cable channel; and

Figure 9c is a perspective view of the embodiment of the mounting bracket of Figure 9a including a cable channel.

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DESCRIPTION OF THE INVENTION

Referring to the Figures, there is shown a mounting system 10 for mounting an item to a wall 16. In the embodiments shown, the item comprises a shelf 12, however it will be appreciated that the mounting system 10 could be applied to the mounting of other items to a surface.

20 The mounting system 10 comprises the shelf 12 and a mounting bracket 14. The mounting bracket 14 is securable to a wall 16 and securing means are provided to secure the shelf 12 to the mounting bracket 14.

The mounting bracket 14 comprises a hollow elongate member 20 having a quadrilateral cross section. The elongate member 20 includes a plurality of first holes

22 in a first side 24 thereof, the first side 24 being the side to be secured to the wall 16. The first holes 22 are provided to receive suitable fixing means to fix the mounting bracket 12 to the wall 16. The fixing means may be any devices suitable for securing the mounting bracket 12, such as known wall fasteners 27. The elongate member 20 is provided with a second set of holes 26 of a second opposed side 25, the second holes 26 being in alignment with the first holes 22. The second set of holes 26 are of larger diameter than the first set of holes 22 and provide access to the first set of holes 22 for insertion of the wall fasteners.

The shelf 12 is provided with a recess 28 in a side 30 of the shelf 12 that is to be located adjacent the wall 16. The recess 28 is of a shape complementary to the shape of the elongate member 20 such that when the elongate member 20 is secured to the wall 16, the elongate member 20 may be received in the recess 28 such that said side 30 of the shelf 12 comes into contact with the wall 16. That is, the elongate member 20 is completely contained within the recess 28.

The mounting bracket 14 includes at least one support member 32 arranged to extend from the mounting bracket 14 in a direction perpendicular to the wall 16 and into the body of the shelf 12. In the embodiment shown, the support members 32 comprise first and second support rods 34. Each support rod 34 extends outwardly from the elongate member 20. The recess 28 in the shelf 12 is provided with first and second openings 36 in the inner surface of the recess 28 aligned such that when the elongate member 20 is received within the recess 28, the first and second support rods 34 are received in corresponding first and second openings 36. The first and second support rods 34 thereby extend throughout at least a portion of the depth of the shelf 12

providing additional strength. Preferably the first and second support rods 34 extend throughout the majority of the depth of the shelf.

In one embodiment, a tube 53 is provided secured within the opening 36. The tube 53 is preferably of a suitable material, such as metal, so as to allow easy insertion of the support rod 34 into the opening 36 and provide additional strength to the assembly.

The support rods 34 are engageable with and disengageable from the elongate member 20. The elongate member 20 is provided with first and second slots 46 in the second side 25 thereof. Each of the slots 46 includes a narrowed portion 48 at an end thereof. The first and second support rods 34 are each provided with a widened portion 49 which is receivable in a corresponding one of the first and second slots 46. The support rod 34 is then slidable along the slot 46 towards the narrowed portion 48, in which the widened portion 49 is then not removable from the slot 46.

The widened portions 49 of the support rods 34 are shaped to be complementary to the cross sectional shape of the elongate member 20, providing the load bearing capability of the support rods 34 and transferring the load to the wall fasteners.

The mounting system 10 includes a securing means to secure the shelf 12 to the mounting bracket 14 when the mounting bracket 14 is received in the recess 28 of the shelf 12. In the embodiment shown, the securing means comprises the support rods 34 and corresponding engagement screws 40. The engagement screws 40 are inserted downwardly through apertures 42 provided in the upper surface of the shelf 12. The apertures 42 are aligned with the openings 36 in the recess 28 such that the engagement screws 40 engage with the support rods 34. In this way, the engagement screws 40 prevent removal of the support rods 34 from the openings 36 and thereby secure the shelf 12 to the mounting bracket 14. While in the embodiment shown, the

engagement screws 40 are inserted downwardly through the apertures, it will be appreciated that the apertures 42 may be provided on the lower surface of the shelf 12, with the engagement screws 40 inserted upwardly. This alternative arrangement may be more suitable when the shelf 12 is mounted in a low position where the upper
5 surface of the shelf 12 is more visible than the lower surface.

In use, the mounting bracket 14 is positioned against the wall 16 in the position in which the shelf 12 is to be mounted. As the mounting bracket 14 comprises the single elongate member 20, levelling the shelf can be performed by simply placing a spirit level on the top of the elongate member 20 and adjusting the elongate member 20
10 until level. Holes to be drilled in the wall for securing the mounting bracket 14 to the wall can then be marked by placing a pen or suitable marker through the first holes 22 via the second holes 26 and marking the wall 16. As an alternative embodiment, the mounting bracket 12 may be provided with integral levelling means in the form of spirit level type bubbles built into the elongate member 20. In this embodiment, the
15 elongate member 20 would simply need to be held against the wall 16 and adjusted until the bubbles indicated the elongate member 20 was level.

Appropriate sized holes can then be drilled in the wall 16 of the marked locations. This enables correct mounting of the assembly with one pair of hands. The elongate member 20 is then placed back against the wall and secured by passing suitable wall
20 fasteners through the second holes 26, first holes 22 and into the wall 16.

The support rods 34 are then secured to the elongate member 20 by insertion of the widened portions 49 into the corresponding slot 46 and sliding the support rods 34 to the narrowed portion 48 of the slot 46. The shelf 12 is then secured to the mounting bracket 14 by sliding the support rods 34 into the openings 36 in the recess 28 until

the elongate member 20 is contained within the recess 28. The shelf 12 is then secured by passing engagement screws 40 through the apertures 42 to engage with the support rods 34. It is noted that even if the mounting bracket 14 has been installed off the horizontal, the shelf 12 will still fit to the mounting bracket 14, which is not the case when using conventional individual mounting brackets.

Figures 9a to 9b show alternative embodiments of mounting systems in accordance with the present invention. In the embodiment of Figure 9a, the elongate member 20 is provided with a single slot 50 running along the entire length of the elongate member 20 instead of the first and second slots 46. The width of the slot 50 is less than that of the widened portions 49 of the support rods 34 and the widened portions 49 are received in the elongate member 20 by sliding into open ends 52 of the elongate member 20 as shown.

In the embodiment shown in Figure 9a, it is envisaged that the elongate member and the shelf 12 are provided in long lengths for purchase that can be cut to any length desired. The number of support rods 34 used will be dependent on the length of the shelf 12 and mounting bracket 14 purchased. In this arrangement, the recess 28 in the shelf 12 will have open longitudinal ends resulting from the cutting and will therefore be in the form of a groove along the rear surface of the shelf 12. Caps (not shown) will be provided that fit into the open ends of the elongate member 20 to cover the resulting opening.

Figures 9b and 9c show alternative embodiments of the mounting brackets 12 of Figures 3 and 9a. In each case, the elongate member is provided with an internal channel 60 adjacent the first side 22. The channel 60 can be used for running cabling for devices to be placed on the shelf 12. One or more holes through the upper surface

of the shelf 12 into the channel 60 may be provided to pass the cabling from within the channel 60 to the devices on the shelf 12.

The gauge, material type and dimensions used in the mounting system can provide a wide range of load bearing capabilities, especially for use with heavy loads, to mount
5 a variety of items on a vertical surface. This is presently generally only possible using multiple individual brackets with the associated installation difficulty and often unsightly end result.

Modifications and variations as would be apparent to a skilled addressee are deemed to be within the scope of the present invention

CLAIMS

1. A mounting system for mounting an item to a surface characterised by comprising a mounting bracket securable to the surface, a recess on the item for receiving the mounting bracket, the recess being provided in the item on a side to be located adjacent the surface and a securing means for securing the mounting bracket to the item when the mounting bracket is received in the recess, the mounting bracket comprising a support member extending away from the surface in use, the support member being arranged to be received in a corresponding opening in the item, wherein the mounting bracket comprises a longitudinally extending slot and the support member has a widened end arranged to be releasably engaged with the slot so as to prevent disengagement of the support member from the mounting bracket.

2. A mounting system in accordance with claim 1, characterised in that the mounting bracket comprises one or more of the slots each having a relatively narrow end and a relatively wide end and the mounting bracket comprises a corresponding number of support members each having a widened portion at an end thereof receivable in the wide end of a slot, the support member being slidable towards the narrow end so that disengagement of the support member from the mounting bracket is prevented.

3. A mounting system in accordance with claim 2, characterised in the mounting bracket comprises a hollow elongate member and the cross sectional shape of the widened portion of the support members is complementary to the cross sectional shape of the hollow interior of the elongate member.

4. A mounting system in accordance with claims 2 or 3, characterised in that a securing means is provided to secure the item to the mounting bracket when the mounting bracket is received in the recess.
5. A mounting system in accordance with claim 4, characterised in that the securing means secures the item to the or each support member of the mounting bracket.
6. A mounting system in accordance with claim 5, characterised in that the securing means comprises one or more screws received in apertures in the item aligned with the openings in the recess, such that the screws engage with the or each support member.
7. A mounting system in accordance with any one claims 3 to 6, characterized in that the hollow elongate member includes a first set of holes on a first side thereof for receiving wall fasteners to secure the elongate member to the surface and a second set of holes on a second opposed side thereof, the second set of holes being of greater diameter than the first set of holes, to provide access to the first set of holes.
8. A mounting system in accordance with any one of the preceding claims, characterised in that the mounting bracket includes an integral spirit level bubble to assist alignment of the mounting bracket on the surface.

9. A mounting system in accordance with any one of the preceding claims, characterised in that the item is a shelf.

10. A mounting system in accordance with claim 9, characterised in that the mounting bracket includes an internal channel for receiving cabling for devices that may be placed on the shelf.