A slotwall bracket includes a generally planar body, an upper mounting flange, and a lower locking flange for preventing the bracket from being accidentally moved or removed from a slotwall panel. The mounting flange is generally L-shaped, and is supported on the upper surface of a horizontal rail in the slotwall. When the bracket is installed, the locking flange snap fits onto the lower surface of the horizontal rail to retain the bracket on the slotwall.
SLOTWALL MOUNTING BRACKET

BACKGROUND OF THE INVENTION

[0001] The present invention relates generally to mounting fixtures and more particularly to a mounting bracket for a "slotwall," which is a wall provided with a number of vertically spaced, elongated, horizontally extending rails defining slots or channels between the rails.

[0002] Slotwall is used in a wide variety of applications for storing and displaying products, tools, and accessories. Examples of the industries in which slotwall is used include retail display, closet storage, garage storage, and office furniture. As is well known, a slotwall is a wall panel formed from metal, pressed board, plastic or other suitable material having a plurality of regularly spaced, horizontally extending rails. Each rail includes an upper surface and a lower surface, and a lip extending from one or both of the surfaces to form channels of L-shaped or T-shaped cross section between the rails. Various different accessories such as brackets, shelves, baskets, and the like are available which are specially designed for fitting into the grooves of the slotwall so that items can be conveniently hung or otherwise supported thereon.

[0003] A typical slotwall mounting bracket includes a flat body and some type of cantilever element for fitting into one of the grooves. The body generally lies flat against the slotwall, so that accessories such as hooks, racks, and shelves can be attached to its outer face. The cantilever element is generally an L-shaped mounting flange that extends perpendicularly from an upper portion of the body and then forms a corner that turns upwards. The L-shaped mounting flange fits into a slotwall channel such that a horizontal portion sits on the upper edge of a first horizontal rail, and a vertical portion is positioned behind a downwardly extending lip of the horizontal rail immediately above.

[0004] In operation, the slotwall bracket is manually hung from a desired groove on the slotwall. First, the L-shaped mounting flange is inserted into the opening of a slotwall groove with the body oriented perpendicularly to the slotwall. The bracket is then pivoted through a lowering motion about the downwardly extending lip of an upper horizontal rail until a portion of the mounting flange is positioned behind the lip and the body bears against the front surface of the slotwall. Alternatively, some brackets are permanently attached to a particular accessory, which may be used as soon as the bracket is hung. In some cases, a plurality of slotwall brackets is used in combination to support accessory too large or heavy for a single bracket.

[0005] Unfortunately, conventional slotwall brackets can be relatively easily inadvertently dislodged from the slotwall after installation. While conventional brackets remain in position well under load, they are easily moved when subjected to upward forces. A common rotation that allows the bracket to be easily installed in the slotwall allows the bracket to rotate away from the wall when a force pulls on the bracket. In a worst case scenario, a person may accidentally knock a bracket and any attached accessory completely off the wall if a force is applied in the wrong direction.

SUMMARY OF THE INVENTION

[0006] The aforementioned problems are overcome by the present invention, wherein a slotwall bracket is provided with a locking flange that snap fits onto the slotwall to prevent the bracket from rotating away from the slotwall and hold the bracket in place on the slotwall.

[0007] In one embodiment, the slotwall bracket includes a generally planar body, an upper L-shaped mounting flange, and a lower locking flange. The mounting flange extends from the body and hooks into a first slotwall groove, supporting the bracket on the upper surface of a horizontal rail on the slotwall. The locking flange also extends from the body, and snap fits onto the downwardly extending lip on the bottom surface of the horizontal rail, preventing the bracket from rotating away from the slotwall.

[0008] In a more specific embodiment, the locking flange includes a first portion, a second portion, and a third portion. The first portion extends generally perpendicularly from the body. The second portion extends at an angle upwardly from the first portion such that the second portion fits around the downwardly extending lip to hold the bracket on the slotwall. The third portion extends from the second portion to provide a ramped leading edge for the locking flange so that the locking flange can snap fit about the lip. One or more of the portions may define one or more voids to increase the flexibility of the locking flange relative to the body and reduce the effort required to snap fit the locking flange about the lip. The cutout also provides a pry point to aid in removal of the bracket from the slotwall.

[0009] In a further embodiment, the body of the bracket includes a rear surface facing the slotwall and a front surface opposite the rear surface. The front surface includes one or more protrusions that provide a surface for welding an accessory mount to the bracket. The accessory mount enables a variety of conventional accessories to be attached to and supported by the bracket, avoiding the purchase or remanufacturing of modified slotwall accessories, making the present invention easily adaptable to existing slotwall accessories.

[0010] These and other objects, advantages, and features of the invention will be readily understood and appreciated by reference to the detailed description of the current embodiment and the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1 is a perspective view of the mounting bracket of the present invention.

[0012] FIG. 2 is a front view of the bracket.

[0013] FIG. 3 is a side view of the bracket.

[0014] FIG. 4 is cross sectional view taken along line 4 of FIG. 2.

[0015] FIG. 5 is a close up cross sectional view of the portion of the bracket within line 5 in FIG. 4.

[0016] FIG. 6 is a close up cross sectional view of the portion of the bracket within line 6 in FIG. 4.

[0017] FIG. 7 is a rear view of the bracket.

[0018] FIG. 8 is a top view of the bracket.

[0019] FIG. 9 is a bottom view of the bracket.

[0020] FIG. 10 is a perspective view of the bracket including mounting forks.
FIG. 11 is a side view of the bracket including an accessory mount installed on the slotwall. A partially installed bracket is shown in phantom lines.

FIG. 12 is a perspective view of the bracket installed on the slotwall.

DETAILED DESCRIPTION OF THE INVENTION

I. Overview

A slotwall bracket in accordance with a preferred embodiment of the present invention is shown in FIGS. 1 and 3 generally designated 10. The bracket includes a generally planar body 12, a mounting flange 14, and a locking flange 16. In operation, the mounting flange 14 is inserted into a first slotwall groove 18 (shown in FIG. 11), and rotated in position so it hangs on the upper surface 22 of a horizontal rail 24 in the slotwall 20. The locking flange 16 is snap fitted onto the downwardly extending lip 26 on the horizontal rail 24.

II. Structure

As noted above, the slotwall bracket 10 is mounted on the slotwall 20. Slotwall 20 is widely known and therefore will not be discussed in detail here. In short, slotwall 20 is generally made from pressed board such as medium density fiberboard (MDF), or from plastic or extruded metal such as steel or aluminum. FIGS. 11 and 12 show the slotwall 20. In the illustrated embodiment, the slotwall 20 includes a plurality of vertically spaced horizontal rails 24. Each slotwall rail 24 generally includes an upper surface 22, a lower surface 28, and a lip 26 extending downwardly from the lower surface 28. The rails 24 each define a height 13 from the upper surface 22 to the lower surface 28. A plurality of slotwall grooves 18 having an L-shaped cross-section are formed between the horizontal rails 24. In an alternative embodiment (not shown), the rails 24 may include a lip extending from both the upper and lower surface, such that the grooves each have a T-shaped cross section. As illustrated, the downwardly extending lip 26 includes a rounded tip 30.

As shown in FIGS. 3-7, the bracket includes a body 12, a mounting flange 14, and a locking flange 16. The body 12 is generally planar and includes a front surface 34, rear surface 36, top edge 38, and bottom edge 40. The body 12 includes a height 15 between the top 38 and bottom 40 edges that is approximately equal to the height 13 of a horizontal rail 24 on the slotwall 20. In the illustrated embodiment, the front surface 34 includes a plurality of protrusions in the form of ribs 44 that extend transversely across the body 12. The ribs 44 add strength to the body 12 and also provide a welding surface for attaching an accessory mount, such as mounting forks 50 (shown in FIG. 10) a hook, a bracket, or a variety of alternatives. An additional rib 45 may extend around the periphery of the front surface 34 for added strength. The mounting flange 14 extends from the top edge of the body 12 in a generally perpendicular direction. Mounting flanges are widely known, and are typically L-shaped for extending into a slotwall groove 18. As shown in FIG. 3, the mounting flange 16 includes a first member 52 that extends from the body 12. A second member 54 extends upwardly from the first member 52 approximately perpendicular to the first member 52. The second member 54 may include a curved end 56 that angles back toward the body 12.

As shown, the locking flange 16 extends in a generally perpendicular direction from the bottom edge 40 of the body 12; however, the flange may extend at a variety of different directions. The distance between the mounting flange 14 and the locking flange 16 is approximately the same as the height 13 of each of the horizontal rails 24 of the slotwall 20. As a result, in the case where the height 15 of the body is greater than the height of the rail 24, the locking flange 14 may extend from the body 12 at a location inward of the bottom edge 40. The locking flange 16 is generally shaped to correspond to the rounded tip 30 on the downwardly extending lip 26 of a horizontal rail 24, such that the locking flange 16 can snap fit about the rounded tip 30 when the bracket 10 is rotated into place. As illustrated, the locking flange 16 includes a first portion 60 extending from the body 12, and a second portion 62 that angles upwardly from the first portion 60. A third portion 64 may extend from the second portion 62 and curve downwardly from the second portion 62 to form a ramped leading edge for the locking flange 16. In addition, as shown in FIG. 9, the locking flange 16 may define a cutout 66 to increase the flexibility of the locking flange 16 relative to the body 12. As illustrated, the cutout 66 is located in the first portion 60; however, it may be located anywhere in the locking flange 16.

III. Operation

In operation, the present invention is mountable onto conventional slotwall 20 in a few simple steps, while accommodating a variety of accessories and preventing unwanted rotation and movement. Installation of the present invention requires first hanging the mounting flange 14 on the slotwall 20, and then snap fitting the locking flange 16 to the slotwall.

The first step of installing a slotwall bracket in accordance with the present invention is hanging the mounting flange 14 on the slotwall 20. To begin, a desired height and location on the slotwall 20 are chosen. The bracket 10 is then held manually such that the body 12 is perpendicular to the slotwall 20, with the second member 54 of the mounting flange 14 aligned with the chosen horizontal slotwall groove 18. The mounting flange 14 is then inserted in to the groove 18 and is rotated until the second member 54 extends upwardly behind the downwardly extending lip 26 of a first slotwall rail 24 and the first member 52 is supported on the upper surface 22 of a second horizontal slotwall rail 24. FIG. 11 shows the bracket 10 in a partially installed position in phantom lines. In the final position, shown in solid lines in FIG. 11 and in FIG. 12, the rear surface 36 of the body bears against the slotwall 20.

As the bracket 10 is manually rotated into the final position, the locking flange 16 approaches the rounded tip 30 of the downwardly extending lip 26 of the second horizontal rail 24. The ramped leading edge 64 of the locking flange 16 engages the rounded tip 30 and slides past the rounded tip 30 until the second portion 62 fits around a portion of the rounded tip 30 to lock the bracket 10 in place on the slotwall 20. As the locking flange 16 engages the downwardly extending lip 26 and is slid over the rounded tip 30, the locking flange 16 may flex slightly outward, and then return or “snap” back into place to fit securely around the rounded tip 30. With the bracket 10 in place and the locking flange 16 snap fitted about a portion of the downwardly extending
lip 26, a desired accessory (not shown) can be mounted to an accessory mount that attaches to the front surface 34 of the bracket 10.

[0030] Removal of the slotwall bracket 10 is essentially the opposite of installation. First, the locking flange 16 is pulled away from the downwardly extending lip 26 until it is no longer engaged with the lip 30. In doing so, the cutout 66 may be used as a pry point by insertion of a tool into the cutout 66. Next, the bracket 10 is rotated out of the slotwall 20. When removing the bracket 10, the bottom 40 of the body 12 is pulled away from the slotwall 20 so that the mounting flange 14 rotates about the downwardly extending lip 26 of the first or upper horizontal rail 24. Rotation is complete when the body 12 is again perpendicular to the slotwall 20, and the bracket 10 can then be removed from the groove 18.

[0031] In summary, once a desired height and location for placement of the bracket 10 is determined, the bracket 10 can be attached to the slotwall 20 to hang the bracket 10 and any accessory such that they will not be knocked off of the slotwall 20.

[0032] The above description is that of a current embodiment of the invention. Various alterations and changes can be made without departing from the spirit and broader aspects of the invention as defined in the appended claims, which are to be interpreted in accordance with the principles of patent law including the doctrine of equivalents. Any reference to claim elements in the singular, for example, using the articles “a,” “an,” “the” or “said,” is not to be construed as limiting the element to the singular.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A slotwall bracket for mounting on a slotwall, comprising:
   a generally planar body having an upper portion and a lower portion;
   a mounting flange extending from said upper portion of said body, said mounting flange adapted to be supported on top edge of a first horizontal rail, a first portion of said mounting flange adapted to be supported on a first portion of the slotwall groove, said body extending behind a second portion of the slotwall groove.
   a second portion of said mounting flange extending from said body, said mounting flange adapted to be supported on said second portion of the slotwall groove.
   a first portion extending generally perpendicularly from said body, and a second portion extending upwardly from said first portion, said second portion adapted to fit around a portion of the slotwall.
   a bracket including a generally planar body, a generally L-shaped mounting flange extending from said body, and a locking flange extending from said body, said locking flange adapted to be supported on said top edge of said horizontal rail, said locking flange adapted to be snap fitted about said bottom edge of said horizontal rail.

8. The assembly of claim 7 wherein said locking flange includes a first portion extending from said body and a second portion extending from said first portion, said second portion extending upwardly from said first portion such that said locking flange fits around a portion of said downwardly extending lip.

9. The assembly of claim 8 wherein said locking flange includes a third portion, said third portion curved downwardly from said second portion to provide a ramped leading edge on said locking flange.

10. The assembly of claim 8 wherein said first portion includes a cutout, said cutout increasing the flexibility of said locking flange relative to said body.

11. The assembly of claim 7 wherein said L-shaped mounting flange includes a first member extending generally perpendicularly from said body and a second member extending upwardly from said first member, said second member extending behind the downwardly extending lip of a second said horizontal rail.

12. The assembly of claim 7 wherein said body includes a rear surface facing said slotwall and a front surface opposite said rear surface, said front surface including a plurality of protrusions extending outwardly from said second surface, said bracket including an accessory mount welded to at least one of said protrusions.

13. The assembly of claim 12 wherein said protrusions are a plurality of ribs extending along said front surface of said body.

14. A slotwall bracket for mounting on a slotwall panel, said slotwall panel including a plurality of vertically spaced horizontal rails, each of said rails including a top edge, a bottom edge, and a lip extending downwardly from said bottom edge, said slotwall bracket comprising:
   a base plate including a generally planar body;
   an L-shaped mounting flange extending from said body, a first portion of said mounting flange adapted to be supported on the top edge of a first horizontal rail, a
second portion of said mounting flange adapted to extend behind the downwardly extending lip of a second horizontal rail; and

a locking flange extending from said body, said locking flange including a first portion extending from said body, and a second portion extending from said first portion, said second portion extending upwardly from said first portion such that said second portion is adapted to snap fit about the downwardly extending lip of the first horizontal rail.

15. The slotwall bracket of claim 14 wherein said locking flange includes a third portion, said third portion curving downwardly from said second portion to form a ramped leading edge for said locking flange.

16. The slotwall bracket of claim 14 wherein said locking flange includes a cutout, said cutout increasing the flexibility of said locking flange relative to said body.

17. The slotwall bracket of claim 14 wherein said body includes a rear surface facing said slotwall and a front surface opposite said rear surface, said front surface including at least one protrusion, said bracket further including an accessory mount, said accessory mount welded to said at least one protrusion.

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