The device to hang an architectural panel on a wall preferably comprises a support structure having first and second surfaces and a circumferential surface therebetween, a hole between the first and second surfaces, and a screw having a head, shaft and plurality of threads about the shaft. The screw is located in the hole and connected to the support structure such that the head is at or below the first surface of the support structure and the shaft is perpendicular thereto. The device can be driven into a wall and will support an architectural panel locatable thereon. Specifically, a panel clip, attached to the back of the architectural panel, can be placed on the support structure and the device will support the panel placed thereon. The circumferential surface of the support structure preferably includes a bevel to facilitate the placement of the panel clip onto the support structure.
ARCHITECTURAL PANEL HANGER

BACKGROUND OF THE INVENTION

[0001] 1. Technical Field
[0002] The present invention is directed to the installation of panels, such as architectural panels. More particularly, the present invention is directed to a device that facilitates the hanging of panels on a wall or other suitable surface and a method of using same.

[0003] 2. Background Information
[0004] Architectural panels are well known in the building trade and are available in a wide variety of materials, such as solid wood, wood veneer, metal, plastic, polycarbonate, resin, Formica, acoustic and composites.

[0005] Architectural panels are typically used to cover existing wall surfaces to create a specific design element or effect. For example, wood or wood veneer panels are often used to transform a room into an oak paneled library or formal conference room.

[0006] It is well known to hang panels using panel clips, also commonly referred to as panel "Z" clips and/or "Z" clips, which have a first and a second surface vertically offset from each other.

[0007] Specifically, a first panel clip is attached to the surface of a wall, typically at the location of a wall stud, such that its first offset surface is attached to the wall and its second offset surface is offset from the wall in an upward position. A second panel clip is attached to the back of the panel such that its first offset surface is attached to the back of the panel and its second offset surface is offset from the back of the panel in a downward position. The panel is hung, i.e., attached to the wall, by placing the downward-facing offset surface of the second panel clip into the upward-facing offset surface of the first panel clip.

[0008] Panel installers need to insure that all panels will be aligned in the vertical plane so that the face of each panel will be aligned with the face of every other panel.

[0009] Since the surface of a wall is not typically vertically aligned over the entire surface of the wall, a plurality of flat shims are combined to build out the surface of the wall to a vertical reference, typically at the location of each wall stud where each panel clip is to be located.

[0010] The shims are installed such that the outward-facing surface of each shimmed area is in vertical alignment with the outward-facing surface of every other shimmed area. The shims are typically secured in place by nails, screws and/or glue, in accordance with the installer’s preference.

[0011] Once all Shimmed areas are in vertical alignment with each other over the given horizontal span, a first set of panel clips are securely attached to the outward-facing surface of each shimmed area such that the panel clips are horizontally aligned with each other. A second set of panel clips are then attached to the back of the panels, and the panels are hung by placing the panel clips attached to the panels into the panel clips attached to the wall.

[0012] While this method allows for vertical alignment of the panel clips attached to the wall, the prior art method of building out the wall using shims is very time consuming and labor intensive.

[0013] Moreover, shims have a discrete thickness. Therefore, the accuracy of stacking shims to build out the wall to correspond with the vertical reference will inherently be constrained by the thickness of the thinnest shim used by the installer, since this dimension represents the minimum adjustment available to the installer using the prior art method.

SUMMARY OF THE INVENTION

[0014] The present invention is directed to a device and method that alleviate the necessity to use shims when installing architectural panels, thereby saving substantial cost, time and effort in the installation of the panels, compared to the prior art method of installation discussed above. Additionally, the present invention allows for greater vertical accuracy in the installation of the panels, compared to the prior art method.

[0015] A first embodiment of the device of the present invention preferably comprises a support structure having a first and a second surface and a circumferential surface therebetween, a hole located between the first and second surfaces of the support structure, and a screw having a head, a shaft and a plurality of threads located about at least a portion of the shaft. The screw is located in the hole and operatively connected to the support structure such that the head of the screw is at or below the first surface of the support structure and the head is perpendicular thereto.

[0016] A method of hanging an architectural panel onto a wall using the first embodiment of the device of the present invention preferably comprises the steps of rotating the screw of the device such that at least a portion of the screw of the device is operatively connected to a wall such that the first surface of the support structure is in vertical alignment with a predetermined vertical reference, connecting a panel clip to an architectural panel, and placing the panel clip connected to the architectural panel over a portion of the support structure of the device operatively connected to the wall.

[0017] The method of hanging an architectural panel onto a wall using the first embodiment of the present invention preferably further comprises the step of aligning the screw of the device to a predetermined horizontal reference prior to the step of rotating the screw of the device.

[0018] A method of hanging at least two architectural panels onto a wall using at least two devices of the first embodiment of the present invention preferably comprises the steps of rotating the screw of the first device such that at least a portion of the screw of the first device is operatively connected to a wall such that the first surface of the support structure of the first device corresponds to a predetermined vertical reference, rotating the screw of the second device such that at least a portion of the screw of the second device is operatively connected to the wall such that the first surface of the support structure of the second device corresponds to the predetermined vertical reference, connecting a first panel clip to a first architectural panel, connecting a second panel clip to a second architectural panel, placing the first panel clip connected to the first architectural panel over a portion of the support structure of the first device operatively connected to the wall, and placing the second panel clip connected to the second architectural panel over a portion of the support structure of the second device operatively connected to the wall.

[0019] The method of hanging at least two architectural panels onto a wall using at least two devices of the first embodiment of the present invention preferably further comprises the steps of aligning the screw of the first device to a
A second embodiment of the device of the present invention preferably comprises a support structure having a first and a second surface and a circumferential surface therebetween, a shaft integral with the support structure, the shaft having a tip, a longitudinal axis and a plurality of threads located about at least a portion of the shaft, wherein the longitudinal axis of the shaft is perpendicular to the first surface of the support structure, and an indentation in the first surface of the support structure that enables the threads located about the shaft to circumscribe about the longitudinal axis of the shaft. At least a portion of the threads of the shaft is capable of being driven into a wall and the support structure is capable of supporting an architectural panel operatively locatable thereon.

A method of hanging an architectural panel onto a wall using the second embodiment of the device of the present invention preferably comprises the steps of rotating the indentation of the device such that at least a portion of the threads located about the shaft is operatively connected to a wall such that the first surface of the support structure is in vertical alignment with a predetermined vertical reference, connecting a panel clip to an architectural panel, and placing the panel clip connected to the architectural panel over a portion of the support structure of the device operatively connected to the wall.

The method of hanging an architectural panel onto a wall using the second embodiment of the device of the present invention preferably further comprises the step of aligning the longitudinal axis of the shaft of the device to a predetermined horizontal reference prior to the step of rotating the indentation of the device.

A method of hanging at least two architectural panels onto a wall using at least two devices of the second embodiment of the present invention preferably comprises the steps of rotating the indentation of the first device such that at least a portion of the threads located about the shaft of the first device is operatively connected to a wall such that the first surface of the support structure of the first device corresponds to a predetermined vertical reference, rotating the indentation of the second device such that at least a portion of the threads located about the shaft of the second device is operatively connected to the wall such that the first surface of the support structure of the second device corresponds to the predetermined vertical reference, connecting a first panel clip to a first architectural panel, connecting a second panel clip to a second architectural panel, placing the first panel clip connected to the architectural panel over a portion of the support structure of the first device operatively connected to the wall, and placing the second panel clip connected to the architectural panel over a portion of the support structure of the second device operatively connected to the wall.

The method of hanging at least two architectural panels onto a wall using at least two devices of the second embodiment of the present invention preferably further comprises the steps of aligning the longitudinal axis of the shaft of the first device to a predetermined horizontal reference prior to the step of rotating the indentation of the first device, and aligning the horizontal axis of the shaft of the second device to the predetermined horizontal reference prior to the step of rotating the indentation of the second device.

**BRIEF DESCRIPTION OF THE DRAWINGS**

**FIG. 1** illustrates a common prior art panel clip. **FIG. 2** illustrates the prior art method of hanging a panel. **FIG. 3** illustrates a top view of a first embodiment of the present invention. **FIG. 4** is a cross-sectional side view of the present invention shown in **FIG. 3**. **FIG. 5** is a cross-sectional side view of the support structure shown in **FIG. 3**. **FIG. 6** illustrates a top view of a second embodiment of the present invention. **FIG. 7** is a cross-sectional side view of the present invention shown in **FIG. 6**. **FIG. 8** illustrates a first method of hanging a panel using the device of the present invention. **FIG. 9** illustrates a second method of hanging a panel using the device of the present invention. **FIGS. 10 and 11** show alternative embodiments of the support structure of the present invention.

**DESCRIPTION OF THE PREFERRED EMBODIMENT(S)**

**FIG. 1** illustrates a common prior art panel clip. As shown in **FIG. 1**, panel clip **100** comprises first surface **102** and second surface **104** offset therefrom. First surface **102** includes a plurality of ridges **106**, as well as holes **108** and **110**, which holes are typically slightly offset from each other. Other types of panel clips that have a flat, non-ridged, first surface **102** are known in the art. Both types of panel clips are applicable for use with the present invention, as discussed in more detail below with reference to **FIGS. 8 and 9**.

The distance between first surface **102** and second surface **104** is defined herein as engagement width **112**, the overall width of the panel clip is defined herein as overall width **116**, and the difference therebetween is defined herein as offset surface width **114**.

Turning now to **FIG. 2**, the prior art method of hanging a panel is illustrated. As discussed above, panel installers want to make sure that all panels will be aligned in the vertical plane so that the face of each panel will be aligned with the face of every other panel.

Since the vertical surface of a wall is not typically vertically aligned, i.e., perfectly perpendicular, over the entire surface of the wall, a series of shims are used to build out the surface of the wall to a vertical reference at the location of each wall stud where each panel clip is to be located. The shims are typically flat strips of wood ranging in thickness from about 1/2" to about 1/2" and are stacked one on top of the other as may be necessary to build out the surface of the wall to the vertical reference.

For example, shims **200** and **202** are secured to sheetrock **204** at the location of wall stud **206** such that outward-facing surface **208** (i.e., the vertical surface of the stacked shims where panel clip **100a** is to be located) is in alignment with the outward-facing surface of every other shimmed area (not shown). The stacked shims are typically secured in place by nails, screws and/or glue (not shown), in accordance with the installer’s preference.
A level, such as a laser level, is typically employed to insure uniform vertical alignment of each outward-facing surface 208. Typically, shims are used to build out the wall from between about $\frac{3}{16}^{\text{th}}$ to about $\frac{3}{4}$" more, depending on the severity of the wall’s fluctuation from vertical over the span of the wall.

Once outward-facing surface 208 of all shimmed areas are in vertical alignment with each other, relative to a horizontal reference line representing the location of the panel clips, a first set of panel clips, such as panel clip 100a is secured to surface 208 at each shimmed location. A level, such as a laser level, is typically employed to insure uniform horizontal alignment of each panel clip.

Two screws, such as screw 210, are used to secure panel clip 100a in place such that first surface 102 (FIG. 1) having ridges 106 (FIG. 1) is located against surface 208, and second surface 104 (FIG. 1) is upright, as shown.

While screw 210 is shown terminated within sheet-rock 204, it is not uncommon for the screws which secure the panel clips to also be driven through the wall stud, such asstud 206.

Thereafter, a second set of panel clips, such as panel clip 100b, is secured to the back of all panels to be hung, such as panel 212. The second set of panel clips is preferably secured at a specific location, relative to the top or bottom of the panel, to insure that all panels will hang uniformly, relative to each other.

Two screws, such as screw 214, are used to secure panel clip 100b in place such that first surface 102 (FIG. 1) having ridges 106 (FIG. 1) is located against the back of panel 212, and second surface 104 (FIG. 1) is facing downward, as shown.

The panel is hung, i.e., attached to the wall, by placing downward-facing offset surface 104 (FIG. 1) of panel clip 100b into upward-facing offset surface 104 (FIG. 1) of panel clip 100a. Length of engagement 216, also referred to as “lift off”, is defined in the art as the area of overlap between first and second panel clips 100a and 100b.

The length of engagement varies according to the particular panel clip. For example, part number MF-375 available from Monarch Metal Fabrication, Inc., of Bohemia, N.Y., and part number OA540 available from Orange Aluminum, of Orange, Calif., have a $\frac{3}{4}$" length of engagement. Monarch’s part number MF-625 and Orange’s part number OA537 have a $\frac{3}{4}$" length of engagement. Other types of panel clips having other lengths of engagement are also available, e.g., part numbers NYM111M having a 0.75" length of engagement, and NYM2108M having a 0.560" length of engagement, both available from New Metal, of Astoria, N.Y.

The panel clip’s dimensions also vary according to the specific panel clip. For example, the overall dimensions of Monarch’s part number MF-375 are 2.000" Wx1.375" Hx0.250" D, and the thickness of second surface 104 is 0.125"; and the overall dimensions of Monarch’s part number MF-625 are 1.500" Wx1.875" Hx0.200" D, and the thickness of second surface 104 is 0.095". Both Monarch panel clips are also available in 6" and 12" continuous lengths. The overall dimensions of New York Metal’s part number NYM111M are Q" Wx1.781" Hx0.176" D, where Q is either 1.5", 2.5", 8" or 10", and the thickness of second surface 104 is 0.088"; and the overall dimensions of New York Metal’s part number NYM2108M are 9" Wx1.500" Hx0.250" D, and the thickness of second surface 104 is 0.125". It should be noted that depth D has been defined above as overall width 116, the thickness of second surface 104 has been defined as offset surface width 114, and the difference therebetween has been defined as engagement width 112, all with reference to FIG. 1.

The data sheets for the above panel clips are available from Monarch Metal Fabrication, Inc., at www.monarchmetal.com, from Orange Aluminum at www.orangemetal.com, and from New York Metal at www.newyorkmetal.com, which data sheets are incorporated herein by reference.

The prior art method of hanging panels described above provides vertical alignment of the panel clips, and thus vertical alignment of the panels placed thereon.

However, building out a wall via shims is very time consuming and labor intensive because the distance from the wall to the requisite vertical reference will vary from stud location to stud location, and therefore the configuration of individual shims needed to achieve this distance will also vary from stud location to stud location.

The present invention, on the other hand, enables the rapid and accurate installation of panels without the necessity of building out a wall with shims to achieve vertical alignment. Rather, it replaces the panel clip to be secured to the wall (i.e., panel clip 100a) with a device that simplifies vertical alignment while providing increased vertical accuracy.

Turning now to FIGS. 3 and 4, a top view (FIG. 3) and a cross-sectional side view (FIG. 4) of a first embodiment of the present invention are shown. Device 300 preferably comprises support structure 302 having hole 304 into which screw 306 is located.

Support structure 302, also referred to hereafter as disk 302, preferably comprises bevel 402 located along its circumferential surface to facilitate the placement of a panel clip, attached to the back of a panel, onto the disk, as discussed in more detail with reference to FIGS. 8 and 9.

Hole 304 preferably allows screw 306 to be located therein such that the head of the screw is at or below top surface 302a of disk 302. Such a configuration allows a panel clip (such as panel clip 100b, FIG. 2) to be placed on disk 302 such that the head of screw 306 does not interfere with the back of the panel when a panel clip is located thereon, as discussed in more detail with reference to FIGS. 8 and 9.

Hole 304 preferably also allows screw 306 to be located thereina such that the shaft of the screw is perpendicular to top surface 302a of disk 302. Such a configuration insures that when screw 306 is driven perpendicularly into a wall via indentation 308 (located in the head of the screw), the depth of the screw into the wall will act to align top surface 302a to a predetermined vertical reference, as discussed in more detail with reference to FIGS. 8 and 9.

Screw 306 is preferably connected to disk 302 such that top surface 302a of disk 302 will remain perpendicular to the shaft of screw 306. Various methods are known in the art to connect a screw to a disk, e.g., epoxy or other gluing methods and welding, both spot and continuous. Screw 306 is preferably connected to disk 302 via weld 404, and more preferably, a spot weld applied to at least two locations to co-joint screw 306 to bottom surface 302a of disk 302. Alternative weld locations and disk/screw connection methods will be readily apparent to one skilled in the art.

Screw 306 can be a wood screw or a sheet metal screw. In the preferred embodiment, screw 306 is a sheet metal screw having what is commonly referred to in the art as a self-starting tip so that it will easily penetrate a metal stud.
As will be appreciated by one skilled in the art, panels are most often installed in commercial buildings where the wall is sheetrock attached to metal studs. Where non-metal studs are used, alternative screw and tip configurations may be used. For example, where the wall is sheetrock attached to wood studs, a wood screw may be used; where the wall is cement, brick, stone or other masonry, a sheet metal, wood or machine screw may be used.

The head of screw 306 can be flat, oval or round. In the preferred embodiment, screw 306 has a flat head. However, the shape of the head of screw 306 is not critical, provided the head of the screw is at or below top surface 302 of disk 302 when the screw is connected to disk 302, so that the head of screw does not interfere with the back of the panel, as discussed in more detail with reference to FIGS. 8 and 9.

For a screw having either a flat or an oval head, which both comprise a V-shaped lower section, hole 304 of disk 302 is preferably countersunk as shown in FIG. 5, which allows the screw (not shown) to be received into hole 304 such that the head of the screw will be at or below top surface 302 of disk 302. Alternatively, hole 304 can be countersunk in a T-pattern to accommodate a pan-shaped head, as will be readily apparent to one skilled in the art.

Indentation 608, located in the head of the screw, allows the circumferential rotation of the screw about its longitudinal axis. Various screw indentation configurations are known in the art, including slotted, cross (i.e., Phillips), square (i.e., Robertson), star (i.e., Torx), hexagonal, tri-wing, clutch (i.e., bow-tie shaped) and one-way.

In the preferred embodiment, indentation 308 is either a slotted or a cross configuration.

The device of the present invention can be manufactured as an assembly of individual components, as discussed above with reference to FIGS. 3 through 5. Alternatively, the device of the present invention can be fabricated in a unitary fashion, as now discussed with reference to FIGS. 6 and 7.

FIG. 6 is a top view of a second embodiment of the present invention, and FIG. 7 is a cross-sectional side view of the second embodiment of the present invention shown in FIG. 6.

Device 600 preferably comprises support structure 602, indentation 604 and shaft 702.

Support structure 602, also referred to hereafter as disk 602, preferably comprises bevel 704 located along its circumferential surface to facilitate the placement of a panel clip, attached to the back of a panel, onto the disk, as discussed in more detail with reference to FIGS. 8 and 9.

Shaft 702, which includes plurality of threads 706, is preferably integrally connected to bottom surface 602b of disk 602 such that its longitudinal axis is perpendicular to top surface 602a of disk 602. The shaft and threads can be configured as either a wood screw or a sheet metal screw, as discussed above with reference to screw 306 of device 300. In the preferred embodiment, the shaft and threads are configured as a sheet metal screw, i.e., threads 706 run about the length of shaft 702, and tip 708 is configured as a self-starting tip so that it will easily penetrate a metal stud.

Indentation 604, preferably located below top surface 602a of disk 602, allows the circumferential rotation of threads 706 about the longitudinal axis of shaft 702. Various indentation configurations are known in the art, including slotted, cross (i.e., Phillips), square (i.e., Robertson), star (i.e., Torx), hexagonal, tri-wing, clutch (i.e., bow-tie shaped) and one way.

In the preferred embodiment, indentation 604 is either a slotted or a cross configuration, and the location of indentation 604 corresponds to the location of the longitudinal axis of the shaft.

Various manufacturing methods are available to fabricate device 600 in a unitary fashion, such as die-casting the disk-shaft-indentation assembly as an integral unit and machining the threads onto the shaft, or die-casting the disk-shaft assembly, machining the threads and punching the indentation. Other methods will be obvious to one skilled in the art.

Turning now to FIG. 8, a first method of hanging a panel using the device of the present invention shown in FIGS. 3 and 4 is illustrated.

To prepare a wall for the hanging of a panel, the installer preferably selects a horizontal reference corresponding to the horizontal location at which the device of the present invention is to be attached to the wall.

The installer also preferably selects a vertical reference, preferably at the height of the selected horizontal reference, at which the wall, if built out to this vertical reference, would be uniformly vertical, relative to the horizontal reference. The vertical reference also represents the distance away from the wall at which the back of the panel will be located. Therefore, the location of the vertical reference preferably also factors in the overall width of the panel clip (e.g., overall width 116, FIG. 1, of panel clip 100b, FIG. 8).

A level, such as a laser level, is preferably employed to mark the horizontal and vertical references to insure uniform alignment in both planes.

Once the horizontal and vertical references have been established, a device of the present invention is connected to the wall, preferably at a location corresponding to the horizontal reference and at the location of a wall stud.

Specifically, and with reference to FIG. 8, screw 306 of device 300 is rotated clockwise, driving at least a portion of the threads of the screw into sheetrock 204, preferably at a location corresponding to the horizontal reference and at the location of and into wall stud 206.

Screw 306 is preferably rotated clockwise until top surface 302a of disk 302 is in alignment with the vertical reference. In the event the installer rotates the screw such that top surface 302a of disk 302 is closer to the wall than the vertical reference, screw 306 is preferably rotated counterclockwise until top surface 302a of disk 302 is aligned with the vertical reference.

As will be appreciated by one skilled in the art, the overall width of a panel clip (i.e., overall width 116, FIG. 1, of panel clip 100b, FIG. 8), added to the most bowed-out point on the wall, as measured along the horizontal reference (assuming that the wall is not in perfect vertical alignment therein), represents the preferred minimum distance away from the wall at which the vertical reference is to be located. More preferably, the vertical reference is set from about $\frac{1}{8}^\circ$ to about $\frac{1}{2}^\circ$ further out than the preferred minimum distance, as a margin of safety.

Where the vertical reference is set away from the wall a sizable distance, relative to the length of screw 306, or where the installer prefers to add support along the wall at the location of the horizontal reference, blocking 802 (also referred to in the art as “ground”) is preferably attached to sheetrock 204, more preferably at the location of the wall
studs. When blocking 802 is used, screw 306 is driven into blocking 802 prior to being driven into sheetrock 204 and wall stud 206.

[0081] The blocking can be any suitable material that will decrease the distance between the surface of the wall and the vertical reference and allow the threads of a screw, such as screw 306, to penetrate. The blocking can be attached to the wall as individual pieces at the location of each device to be installed, or can be attached as a continuous strip spanning the width of several wall studs.

[0082] In the preferred embodiment, the blocking is a piece of plywood having a thickness ranging anywhere from about ¼" to about ⅜", depending upon the gap to be filled, and about 2½" high, and is attached to the wall at the location of the wall studs via screws, nails and/or glue (not shown) as a continuous strip having an overall length not greater than the width of all panels to be hung on the wall.

[0083] It should be noted that there is no need to shim or otherwise adjust the outward facing surface of the blocking such that it presents a vertically-aligned surface, as was necessary in the prior art when shims were used. The device of the present invention, specifically top surface 302a of device 300 (as well as top surface 602a of device 600), provides the vertically-aligned surface onto which the panel clip (such as panel clip 1006b) will be attached.

[0084] As in the prior art, all panels to be hung are preferably prepared by attaching a panel clip, such as panel clip 1006b, to the back of each panel, such as panel 212. The panel clips secured to the back of the panels are preferably secured at a specific location, relative to the top or bottom of the panel, to insure that all panels will hang uniformly.

[0085] Two screws, such as screw 214, are used to secure panel clip 1006b in place such that the face of the panel clip’s first surface (102, FIG. 1) is located against the back of panel 212, and the panel clip’s second surface (104, FIG. 1) is facing downward, as shown in FIG. 8.

[0086] The panel is hung, i.e., attached to the wall, by placing the downward-facing offset surface (104, FIG. 1) of panel clip 1006b over the upper portion of disk 302. Bevel 402 facilitates the placement of panel clip 1006b over disk 302.

[0087] As will be appreciated by one skilled in the art, the method of hanging an architectural panel as discussed above with reference to FIG. 8 is applicable when the gap between the ceiling (or other limiting surface) and the top of the panel is intended to be greater than or equal to the panel clip’s length of engagement.

[0088] Where the panel is to be hung closer to the ceiling than the dimension of the panel clip’s length of engagement, e.g., abutting the ceiling, the panel is preferably hung as described with reference to FIG. 9.

[0089] Turning now to FIG. 9, a second method of hanging a panel using the device of the present invention is illustrated. The wall is preferably prepared by selecting a horizontal and vertical reference, device 300 is attached to sheetrock 204 (or to sheetrock 204 and blocking 802), and panel clip 1006b is attached to the back of panel 212, all as discussed above with reference to FIG. 8.

[0090] However, as shown in FIG. 9, second surface (104, FIG. 1) of panel clip 1006b is attached to the back of panel 212 facing upward, and the panel is hung by placing upward-facing second surface (104, FIG. 1) of panel clip 1006b over the lower portion of disk 302. This method allows the top of panel 212 to be flush with ceiling 902.

[0091] As known in the art, in order to maintain the vertical stability of panel 212, cleat 904 is typically attached to the lower portion of the back of panel 212 via at least two screws, such as screw 906, and screw 908 is typically driven into sheetrock 204 and wall stud 206 a sufficient distance so that the head of screw 908 provides a surface for the back of cleat 904 to maintain the panel in a vertical position. Additionally, in order to maintain the positional stability of panel 212, at least two screws, such as screw 910, are typically driven through cleat 904 into sheetrock 204 and wall stud 206. Screw 908 ensures that screw 910 does not affect the vertical integrity of panel 212.

[0092] The cleat is typically a piece of plywood varying from about ¼" to about ½" thick, depending on the total available distance between the wall and the back of the panel. Additionally, the cleat is typically a continuous strip having an overall length not greater than the width of the panel, thereby providing several locations into which screws, such as screw 910, can be deployed to secure the panel in place.

[0093] The cleat is typically positioned such that the distance between the bottom of cleat 904 and floor 912 is about 1 inch. The height of the cleat is typically dependent upon the height of a baseboard molding (not shown) to be applied at the bottom of the panels after all panels have been hung. For example, an installation specifying a 4" baseboard typically employs about a 5" high cleat, about two inches of which are attached to the back of the panel and about three inches of which overhang the bottom of the panel. An installation specifying a 3" baseboard typically employs about a 4" high cleat, about two inches of which are attached to the back of the panel and about two inches of which overhang the bottom of the panel.

[0094] The methods of hanging an architectural panel by employing device 300, as discussed above with reference to FIGS. 8 and 9, are equally applicable to hanging an architectural panel by employing device 600, as will be obvious to one skilled in the art.

[0095] Additionally, the methods of hanging an architectural panel using device 300 (or device 600), as discussed above with reference to FIGS. 8 and 9, are repeatable for hanging a plurality of panels until the requisite number of devices of the present invention, whether all device 300, all device 600, or a combination of the two, are installed. The number of requisite devices is preferably determined by the number of panels to be hung and the width of the panel clip attached to each panel.

[0096] For example, where the panel clip attached to the panel is Monarch part number MF-375 or MF-625, having a width of 2" and 1.5" respectively, a single device of the present invention is preferably used for each such panel clip.

[0097] Panel clips are also available in substantially greater widths, e.g., 6", 8", 10" and 12", and can be cut to correspond to the width of the panel. Reasons to use a wider panel clip include, e.g., the weight and/or overall width of the panel, as well as the structural integrity of the wall. It is contemplated that more than one device of the present invention can be used to support a panel where a wider panel clip, relative to the above-mentioned Monarch panel clips, is used. It is further contemplated that the devices of the present invention can be installed at locations along the wall as may be necessary to support such wider panel clips, regardless of the location of the wall studs.

[0098] Based on the length of engagement (216, FIG. 2) of Monarch part numbers MF-375 (i.e., 0.375") and MF-625...
the diameter of disk 302 of device 300, as well as the diameter of disk 602 of device 600, is preferably about 1 5/8" so that both device 300 and device 600 can be used with either Monarch panel clip. Other disk diameters will be apparent to one skilled in the art. For example, a much larger disk diameter may be employed where it is desirable that top surface 302a (602a) provides increased vertical support to the back of the panel.

Similarly, based on the engagement width (112, Fig. 1) of Monarch part numbers MF-375 (i.e., 0.125") and MF-625 (i.e., 0.105"), the thickness of disk 302 of device 300, as well as the thickness of disk 602 of device 600, is preferably no greater than about 0.100", more preferably about 0.090", so that both device 300 and device 600 can be used with either Monarch panel clip. Other disk thicknesses will be apparent to one skilled in the art.

The circumferential surface between top surface 302a/602a and bottom surface 302b/602b of disk 302/602 is preferably perpendicular thereto (not including bevel 402/704), providing a flat surface onto which a panel clip can rest. Alternatively, the circumferential surface could be: curved or rounded from the top surface towards the bottom surface, which inherently incorporates a bevel-like surface; convex, which inherently incorporates two bevel-like surfaces; concave, which provides two points upon which the panel clip can rest; or grooved or otherwise textured (i.e., having a plurality of channels or depressions cut therein or bumps or raised portions thereon, in any pattern), which provides a textured surface upon which the panel clip can rest. Other circumferential surface and bevel configurations will be apparent to one skilled in the art.

As will be appreciated by one skilled in the art, support structure 302/602 supports a panel to be hung on a wall. Specifically, support structure 302/602 supports a panel clip attached to the back of the panel, as shown and discussed with reference to Figs. 8 and 9.

For device 300, support structure 302 is preferably symmetrical about the center of hole 304 (Figs. 3 through 5). Similarly, for device 600, support structure 602 is preferably symmetrical about indentation 604 (Figs. 6 and 7). In this way, installation of the devices of the present invention is simplified and requires only one set of measurements.

Specifically, in use, the relative height of device 300/600, as measured by the corresponding edge or bottom-most edge of support structure 302/602, will be identical, relative to screw 306/shaft 702, regardless of the rotational position of screw 306/shaft 702.

If the devices of the present invention are installed at a uniform height, e.g., along the horizontal reference, the relative height of the top-most/bottom-most edge of each installed device will be identical, relative both to all installed devices as well as to the horizontal reference, regardless of the rotational position of screw 306/shaft 702, thereby facilitating the uniform placement of panel clips on the back of the panels to be hung.

Since all devices would have the same relative height, provided all installed devices were aligned to the same horizontal reference, the location of all panel clips and the height of all hung panels will be identical. This would be true whether the panel is to be hung as shown with reference to Fig. 8 or as shown with reference to Fig. 9.

In the preferred embodiment, support structure 302/602 is round. Other shapes will be apparent to one skilled in the art.

In the preferred embodiment, top surface 302a/602a of support structure 302/602 is parallel to bottom surface 302b/602b. Alternatively, one or both surfaces could be concave, such as shown with reference to Figs. 10 and 11. An advantage of a concave surface is that hole 304 of device 300 would not need to be countersunk, providing the concavity was located in top surface 302a of disk 302 (Figs. 3 through 5). Other top and/or bottom surface configurations will be apparent to one skilled in the art.

In order to maintain the horizontal position of the hung panel over time, support structure 302, as well as device 600, is preferably comprised of a material sufficiently strong to support the weight of the panel without fatigue. The material of support structure 302 is preferably steel. In addition to strength, the material of device 600 should preferably be easy to work with in order to manufacture device 600 as a unitary structure. The material of device 600 is preferably steel or an aluminum alloy, such as 6063-T6 (i.e., the material used to manufacture the Monarch panel clips), to minimize any galvanic response between dissimilar metals. Other support structure 302 and device 600 materials will be apparent to one skilled in the art.

Screw 306 of device 300 (Figs. 3 and 4) is preferably a #12 sheet metal screw manufactured from stainless steel, 1 5/8" in length and having a self-starting tip so that it will easily penetrate a metal wall stud. Similarly, shaft 702 of device 600 (Figs. 6 and 7) is preferably configured as a #12 sheet metal screw, 1 5/8" in length, with a self-starting tip. Other screw, shaft and tip configurations will be apparent to one skilled in the art.

The wall to which device 300/600 is attached was illustrated as sheetrock attached to metal studs, as discussed above with reference to Figs. 8 and 9. The present invention is equally suitable for use with wood studs, as discussed above with reference to screw 306 (Figs. 3 and 4). The present invention is also equally suitable for other types of wall materials, including cement board, gypsum board, plywood, plaster, brick and concrete, although some wall materials may require the use of wall anchors, as will be apparent to one skilled in the art. The present invention is further equally suitable regardless of whether screw 306 or shaft 702 ultimately penetrate a metal or a wood wall stud. Additionally, the present invention is equally suitable for both indoor and outdoor applications.

It is estimated that the present invention will save substantial cost, time and effort in the installation of architectural panels, compared to the prior art method of installation. Specifically, the prior art method of building out a wall to a vertical reference using a plurality of shims and then attaching a panel clip (such as panel clip 100a) to the vertically-aligned surface of the shims is very time consuming and labor intensive. The present invention alleviates the necessity of using shims or attaching a conventional two-screw panel clip thereto by the use of a single-screw/single-shaft device (device 300/600) having a surface (top surface 302a/602a) that is readily and easily aligned to the vertical reference by a simple rotation of the screw/shaft.

Additionally, because screw 306/shaft 702 can be rotated in fractional degrees and in both directions, top surface 302a/602a can be adjusted to perfectly align with the vertical reference. The same degree of accuracy under all conditions cannot be claimed by the prior art.

Specifically, shims have a discrete thickness. The accuracy of stacking shims to build out the wall to correspond
with the vertical reference will inherently be constrained by the thickness of the thinnest shim available to the installer, since this dimension represents the minimum adjustment available to the installer using the prior art method.

Accordingly, the use of the present invention should also provide a more accurate panel-hanging method over the prior art, since the top surface of the support structure (i.e., top surface 302a/602a) is readily and easily aligned to the vertical reference by a simple rotation of the screw/ shaft.

Although illustrative embodiments of the present invention have been described in detail with reference to the accompanying drawings, it is to be understood that the invention is not limited to the specific embodiments. Various changes or modifications may be effected therein by one skilled in the art without departing from the scope or spirit of the invention.

1. A device to hang an architectural panel on a wall using a Z-type panel clip without the need to shim the wall, the architectural panel having a front surface and a back surface and the Z-type panel clip having a first surface and second surface offset a predetermined distance from each other and a third surface therebetween, the distance between the first surface and the second surface of the Z-type panel clip being defined as the engagement width, wherein the first surface of the Z-type panel clip is capable of being operatively connected to the back surface of the architectural panel, said device comprising:

- a support structure having a first and a second surface, and a circumferential surface therebetween, wherein the distance between the first and second surfaces of the support structure is less than or equal to the engagement width of the Z-type panel clip, and wherein the support structure is intended to allow the Z-type panel clip, while operatively connected to an architectural panel, to be placed thereover such that the first surface of the support structure would be in juxtaposition with back surface of the architectural panel and at least a portion of the second surface of the support structure would be in juxtaposition with at least a portion of the second surface of the Z-type panel clip;
- a hole, located between the first and second surfaces of the support structure, capable of receiving a screw having a head, a shaft and a plurality of threads located about at least a portion of the shaft such that the head of the screw is locatable in the hole at or below the first surface of the support structure and the shaft is perpendicular thereto; and
- a screw having a head, a shaft and a plurality of threads located about at least a portion of the shaft, wherein the screw is located in the hole and operatively connected to the support structure such that the head of the screw is at or below the first surface of the support structure and the shaft is perpendicular thereto;
- wherein at least a portion of the threads of the screw is capable of being driven into a location of the wall such that the first surface of the support structure can be aligned with a predetermined vertical reference, thus obviating the need to shim the wall at that location, and the device is capable of supporting the architectural panel operatively locatable thereon.

2. The device of claim 1, wherein the hole is countersunk to receive the head of the screw.

3. The device of claim 1, wherein at least a portion of one of the surfaces of the support structure is concave.

4. The device of claim 1, wherein the circumferential surface of the support structure includes a bevel.

5. The device of claim 1, wherein the first and second surfaces of the support structure are substantially flat and substantially parallel to each other.

6. The device of claim 1, wherein the support structure is round.

7. A device to hang an architectural panel on a wall using a Z-type panel clip without the need to shim the wall, the architectural panel having a front surface and a back surface and the Z-type panel clip having a first surface and second surface offset a predetermined distance from each other and a third surface therebetween, the distance between the first surface and the second surface of the Z-type panel clip being defined as the engagement width, wherein the first surface of the Z-type panel clip is capable of being operatively connected to the back surface of the architectural panel, said device comprising:

- a support structure having a first and a second surface, and a circumferential surface therebetween, wherein the distance between the first and second surfaces of the support structure is less than or equal to the engagement width of the Z-type panel clip, and wherein the support structure is intended to allow the Z-type panel clip, while operatively connected to an architectural panel, to be placed thereover such that the first surface of the support structure would be in juxtaposition with back surface of the architectural panel and at least a portion of the second surface of the support structure would be in juxtaposition with at least a portion of the second surface of the Z-type panel clip;
- a shaft integral with the support structure, the shaft having a tip, a longitudinal axis and a plurality of threads located about at least a portion of the shaft, wherein the longitudinal axis of the shaft is perpendicular to the first surface of the support structure; and
- an indentation in the first surface of the support structure, wherein the indentation enables the threads located about the shaft to circumnorate about the longitudinal axis of the shaft, thereby allowing the device to be driven into a location of the wall such that the first surface of the support structure can be aligned with a predetermined vertical reference, thus obviating the need to shim the wall at that location, and the device is capable of supporting the architectural panel operatively locatable thereon.

8. The device of claim 7, wherein at least a portion of one of the surfaces of the support structure is concave.

9. The device of claim 7, wherein the circumferential surface of the support structure includes a bevel.

10. The device of claim 7, wherein the first and second surfaces of the support structure are substantially flat and substantially parallel to each other.

11. The device of claim 7, wherein the support structure is round.

12. A method of hanging an architectural panel onto a wall using a Z-type panel clip without the need to shim the wall and a device, the architectural panel having a front surface and a back surface, the Z-type panel clip having a first surface and second surface offset a predetermined distance from each other and a third surface therebetween, the distance between the first surface and the second surface of the Z-type panel clip being defined as the engagement width, the device compr-
prising a support structure having a first and a second surface and a circumferential surface therebetween, wherein the distance between the first and second surfaces of the support structure is less than or equal to the engagement width of the Z-type panel clip, a hole located between the first and second surfaces of the support structure, and a screw located in the hole and operatively connected to the support structure, the method comprising the steps of:

rotating the screw of the device such that at least a portion of the screw of the device is operatively connected to a location of the wall such that the first surface of the support structure is in vertical alignment with a predetermined vertical reference, thus obviating the need to shim the wall at that location;

connecting the Z-type panel clip to the back surface of the architectural panel; and

placing the Z-type panel clip connected to the back surface of the architectural panel over a portion of the support structure of the device operatively connected to the wall such that the first surface of the support structure of the second device is in juxtaposition with back surface of the first architectural panel at least a portion of the second surface of the support structure of the first device is in juxtaposition with at least a portion of the second surface of the first Z-type panel clip.

13. The method of claim 12, wherein the method further comprises the step of attaching blocking to the wall prior to the step of rotating the screw of the device, whereby at least a portion of the screw is driven into the blocking before being operatively connected to the wall.

14. The method of claim 12, wherein the method further comprises the step of aligning the screw of the device to a predetermined horizontal reference prior to the step of rotating the screw of the device.

15. A method of hanging at least two architectural panels onto a wall using at least two Z-type panel clips without the need to shim the wall and at least two devices, each architectural panel having a front surface and a back surface, each Z-type panel clip having a first surface and second surface offset a predetermined distance from each other and a third surface therebetween, the distance between the first surface and the second surface of the Z-type panel clip being defined as the engagement width, and each device comprising a support structure having a first and a second surface and a circumferential surface therebetween, wherein the distance between the first and second surfaces of the support structure is less than or equal to the engagement width of the Z-type panel clip, a hole located between the first and second surfaces of the support structure, and a screw located in the hole and operatively connected to the support structure, the method comprising the steps of:

rotating the screw of the first device such that at least a portion of the screw of the first device is operatively connected to a first location of the wall such that the first surface of the support structure of the first device corresponds to a predetermined vertical reference, thus obviating the need to shim the wall at that location;

rotating the screw of the second device such that at least a portion of the screw of the second device is operatively connected to a second location of the wall such that the first surface of the support structure of the second device corresponds to the predetermined vertical reference, thus obviating the need to shim the wall at the second location;

connecting the first Z-type panel clip to the back surface of the first architectural panel;

connecting the second Z-type panel clip to the back surface of the second architectural panel;

placing the first Z-type panel clip connected to the back surface of the first architectural panel over a portion of the support structure of the first device operatively connected to the wall such that the first surface of the support structure of the first device is in juxtaposition with back surface of the first architectural panel and at least a portion of the second surface of the support structure of the first device is in juxtaposition with at least a portion of the second surface of the first Z-type panel clip; and

placing the second Z-type panel clip connected to the back surface of the second architectural panel over a portion of the support structure of the second device operatively connected to the wall such that the first surface of the support structure of the second device is in juxtaposition with back surface of the second architectural panel and at least a portion of the second surface of the support structure of the second device is in juxtaposition with at least a portion of the second surface of the second Z-type panel clip.

16. The method of claim 15, wherein the method further comprises the step of attaching blocking to the wall prior to the step of rotating the screw of the first device, whereby at least a portion of the screw of the first device is driven into the blocking before being operatively connected to the wall.

17. The method of claim 15, wherein the method further comprises the steps of:

aligning the screw of the first device to a predetermined horizontal reference prior to the step of rotating the screw of the first device; and

aligning the screw of the second device to the predetermined horizontal reference prior to the step of rotating the screw of the second device.

18. A method of hanging an architectural panel onto a wall using a Z-type panel clip without the need to shim the wall and a device, the architectural panel having a front surface and a back surface, the Z-type panel clip having a first surface and second surface offset a predetermined distance from each other and a third surface therebetween, the distance between the first surface of the support structure of the first device is less than or equal to the engagement width of the Z-type panel clip, a shaft integral with the support structure, the shaft having a tip, a longitudinal axis and a plurality of threads located about at least a portion of the shaft, and an indentation in the first surface of the support structure that enables the threads located about the shaft to circumrotate about the longitudinal axis of the shaft, the method comprising the steps of:

rotating the indentation of the device such that at least a portion of the threads located about the shaft is operatively connected to a location of the wall such that the first surface of the support structure is in vertical alignment with a predetermined vertical reference, thus obviating the need to shim the wall at that location;

connecting the Z-type panel clip to the back surface of the architectural panel; and
placing the Z-type panel clip connected to the back surface of the architectural panel over a portion of the support structure of the device operatively connected to the wall such that the first surface of the support structure is in juxtaposition with back surface of the architectural panel and at least a portion of the second surface of the support structure is in juxtaposition with at least a portion of the second surface of the Z-type panel clip.

19. The method of claim 18, wherein the method further comprises the step of attaching blocking to the wall prior to the step of rotating the indentation of the device, whereby at least a portion of the threads located about the shaft are driven into the blocking before being operatively connected to the wall.

20. The method of claim 18, wherein the method further comprises the step of aligning the longitudinal axis of the shaft of the device to a predetermined horizontal reference prior to the step of rotating the indentation of the device.

21. A method of hanging at least two architectural panels onto a wall using at least two Z-type panel clips without the need to shim the wall and at least two devices, each architectural panel having a front surface and a back surface, each Z-type panel clip having a first surface and second surface offset a predetermined distance from each other and a third surface therebetween, the distance between the first surface and the second surface of the Z-type panel clip being defined as the engagement width, and each device comprising a support structure having a first and a second surface and a circumferential surface therebetween, wherein the distance between the first and second surfaces of the support structure is less than or equal to the engagement width of the Z-type panel clip, a shaft integral with the support structure, the shaft having a tip, a longitudinal axis and a plurality of threads located about at least a portion of the shaft, and an indentation in the first surface of the support structure that enables the threads located about the shaft to circumrotate about the longitudinal axis of the shaft, the method comprising the steps of:

rotating the indentation of the first device such that at least a portion of the threads located about the shaft of the first device is in juxtaposition with at least a portion of the second surface of the first Z-type panel clip and placing the second Z-type panel clip connected to the back surface of the second architectural panel over a portion of the support structure of the second device operatively connected to the wall such that the first surface of the support structure of the second device is in juxtaposition with back surface of the second architectural panel and at least a portion of the second surface of the support structure of the second device is in juxtaposition with at least a portion of the second surface of the Z-type panel clip.

22. The method of claim 21, wherein the method further comprises the step of attaching blocking to the wall prior to the step of rotating the indentation of the first device, whereby at least a portion of the threads located about the shaft of the first device is driven into the blocking before being operatively connected to the wall.

23. The method of claim 21, wherein the method further comprises the steps of:

aligning the longitudinal axis of the shaft of the first device to a predetermined horizontal reference prior to the step of rotating the indentation of the first device; and

aligning the longitudinal axis of the shaft of the second device to the predetermined horizontal reference prior to the step of rotating the indentation of the second device.

24. A device to hang an architectural panel on a wall using a Z-type panel clip without the need to shim the wall, the architectural panel having a front surface and a back surface and the Z-type panel clip having a first surface and second surface offset a predetermined distance from each other and a third surface therebetween, the distance between the first surface and the second surface of the Z-type panel clip being defined as the engagement width, wherein the first surface of the Z-type panel clip is capable of being operatively connected to the back surface of the architectural panel, said device comprising:

a support structure having a first and a second surface, and a circumferential surface therebetween, wherein the distance between the first and second surfaces of the support structure is less than or equal to the engagement width of the Z-type panel clip, and wherein the support structure is intended to allow the Z-type panel clip, while operatively connected to an architectural panel, to be placed thereover such that the first surface of the support structure would be in juxtaposition with back surface of the architectural panel and at least a portion of the second surface of the support structure would be in juxtaposition with at least a portion of the second surface of the Z-type panel clip;

a shaft operatively connected to the support structure, the shaft having a tip, a longitudinal axis and a plurality of threads located about at least a portion of the shaft, wherein the longitudinal axis of the shaft is perpendicular to the first surface of the support structure; and

an indentation operatively connected to the first surface of the support structure, wherein the indentation enables the threads located about the shaft to circumrotate about the longitudinal axis of the shaft, thereby allowing at least a portion of the threads of the shaft to be driven into a location of the wall such that the first surface of the support structure can be aligned with a predetermined vertical reference, thus obviating the need to shim the
wall at that location, the device being capable of supporting the architectural panel operatively locatable thereon.

25. The device of claim 24, wherein the first and second surfaces of the support structure are substantially flat and substantially parallel to each other.

26. The device of claim 24, wherein at least a portion of one of the surfaces of the support structure is concave.

27. The device of claim 24, wherein the circumferential surface of the support structure includes a bevel.

28. The device of claim 24, wherein the shaft is integral with the support structure.

29. The device of claim 24, wherein the support structure further comprises a hole, located between the first and second surfaces of the support structure, capable of receiving a screw having a head such that the head of the screw is locatable in the hole at or below the first surface of the support structure; and

wherein the device further comprises a screw, the screw having the shaft, the tip, the longitudinal axis, the plurality of threads located about at least a portion of the shaft and a head, the head having the indentation, wherein the screw is located in the hole and operatively connected to the support structure such that the head of the screw is at or below the first surface of the support structure and the shaft is perpendicular thereto.

30. A method of hanging an architectural panel onto a wall using a Z-type panel clip without the need to shim the wall and a device, the architectural panel having a front surface and a back surface, the Z-type panel clip having a first surface and a second surface offset a predetermined distance from each other and a third surface therebetween, the distance between the first surface and the second surface of the Z-type panel clip being defined as the engagement width, and the device comprising a support structure having a first and a second surface and a circumferential surface therebetween, wherein the distance between the first and second surfaces of the support structure is less than or equal to the engagement width of the Z-type panel clip, a shaft operatively connected to the support structure, the shaft having a tip, a longitudinal axis and a plurality of threads located about at least a portion of the shaft, and an indentation operatively connected to the first surface of the support structure that enables the threads located about the shaft to circumrotate about the longitudinal axis of the shaft, the method comprising the steps of:

rotating the indentation of the first device such that at least a portion of the threads located about the shaft are driven into the blocking before being operatively connected to the wall;

32. The method of claim 30, wherein the method further comprises the step of aligning the longitudinal axis of the shaft of the device to a predetermined horizontal reference prior to the step of rotating the indentation of the device.

33. A method of hanging at least two architectural panels onto a wall using at least two Z-type panel clips without the need to shim the wall and at least two devices, each architectural panel having a front surface and a back surface, each Z-type panel clip having a first surface and second surface offset a predetermined distance from each other and a third surface therebetween, the distance between the first surface and the second surface of the Z-type panel clip being defined as the engagement width, and each device comprising a support structure having a first and a second surface and a circumferential surface therebetween, wherein the distance between the first and second surfaces of the support structure is less than or equal to the engagement width of the Z-type panel clip, a shaft operatively connected to the support structure, the shaft having a tip, a longitudinal axis and a plurality of threads located about at least a portion of the shaft, and an indentation operatively connected to the first surface of the support structure that enables the threads located about the shaft to circumrotate about the longitudinal axis of the shaft, the method comprising the steps of:

rotating the indentation of the first device such that at least a portion of the threads located about the shaft of the first device is operatively connected to a first location of the wall such that the first surface of the support structure of the first device corresponds to a predetermined vertical reference, thus obviating the need to shim the wall at the first location;

rotating the indentation of the second device such that at least a portion of the threads located about the shaft of the second device is operatively connected to a second location of the wall such that the first surface of the support structure of the second device corresponds to the predetermined vertical reference, thus obviating the need to shim the wall at the second location;

connecting the first Z-type panel clip to the back surface of the first architectural panel;

connecting the second Z-type panel clip to the back surface of the second architectural panel;

placing the first Z-type panel clip connected to the back surface of the first architectural panel over a portion of the support structure of the first device operatively connected to the wall such that the first surface of the support structure of the first device is in juxtaposition with back surface of the first architectural panel and at least a portion of the second surface of the support structure of the first device is in juxtaposition with at least a portion of the second surface of the first Z-type panel clip;

placing the second Z-type panel clip connected to the back surface of the second architectural panel over a portion of the support structure of the second device operatively connected to the wall such that the first surface of the support structure of the second device is in juxtaposition with back surface of the second architectural panel and at least a portion of the second surface of the support structure of the second device is in juxtaposition with at least a portion of the second surface of the second Z-type panel clip.
34. The method of claim 33, wherein the method further comprises the step of attaching blocking to the wall prior to the step of rotating the indentation of the first device, whereby at least a portion of the threads located about the shaft of the first device is driven into the blocking before being operatively connected to the wall.

35. The method of claim 33, wherein the method further comprises the steps of:

- aligning the longitudinal axis of the shaft of the first device to a predetermined horizontal reference prior to the step of rotating the indentation of the first device; and
- aligning the longitudinal axis of the shaft of the second device to the predetermined horizontal reference prior to the step of rotating the indentation of the second device.