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3,477,186

CEILING CHANNEL ASSEMBLY FOR MOVABLE PARTITIONS

Original Filed June 3, 1965

3 Sheets-Sheet 1

FIG. 1a.

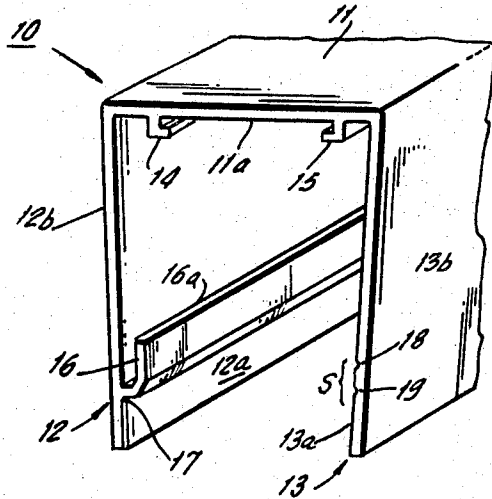


FIG. 1b.

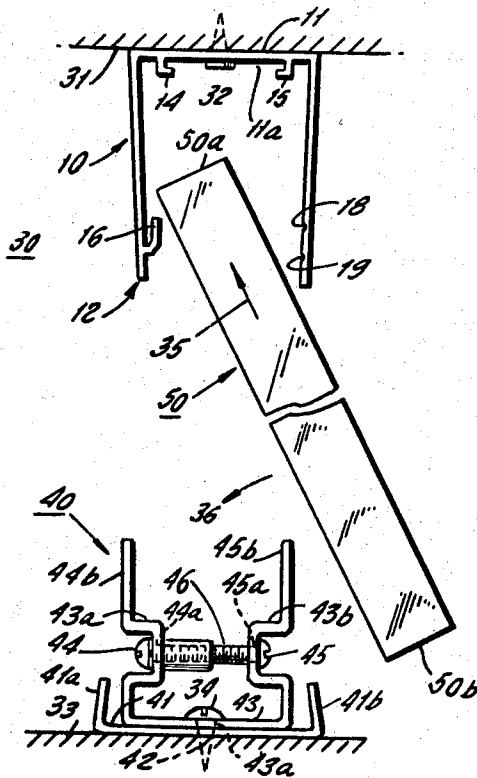
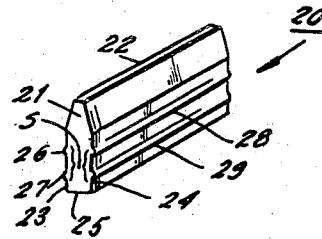
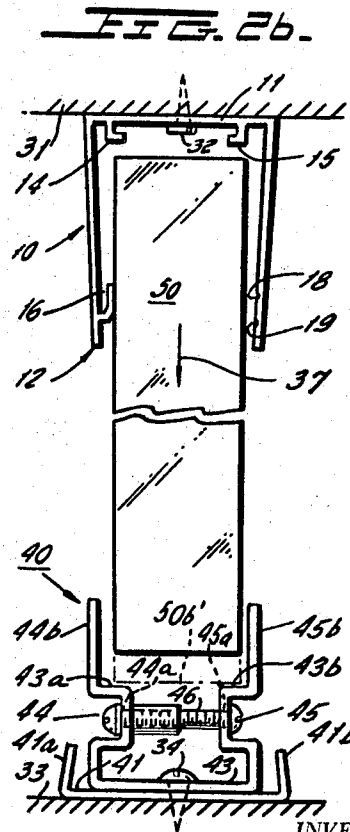


FIG. 2a.



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3 Sheets-Sheet 3

FIG. 4a.

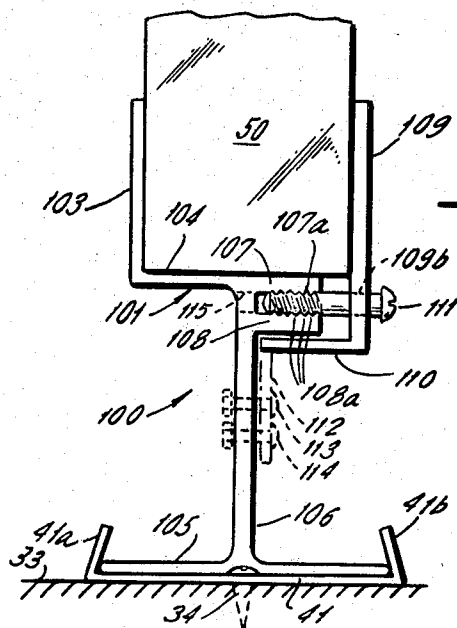
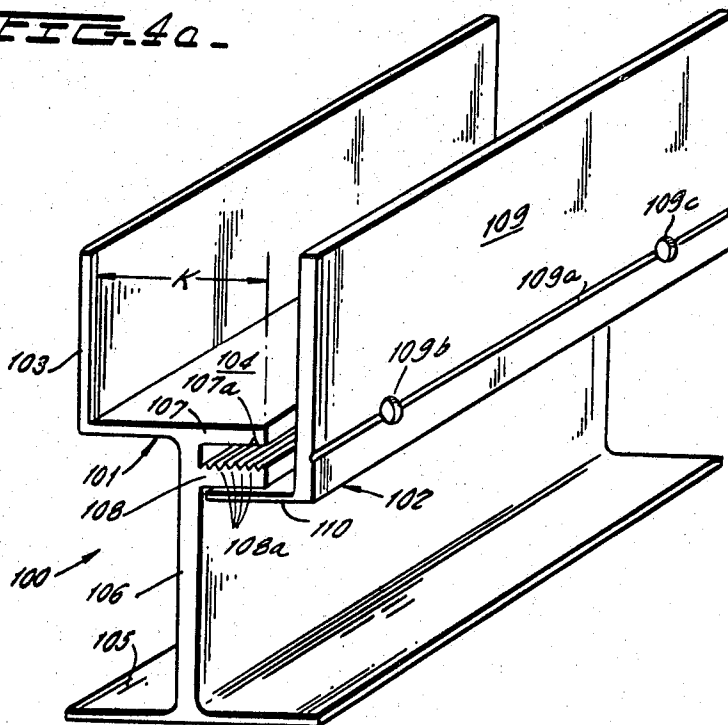


FIG. 4b.

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CEILING CHANNEL ASSEMBLY FOR MOVABLE PARTITIONS

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Original application June 3, 1965, Ser. No. 460,964, now
Patent No. 3,358,411, dated Dec. 19, 1967. Divided and
this application Aug. 28, 1967, Ser. No. 678,126

Int. Cl. E04c 3/32; E04b 2/82

U.S. Cl. 52-242

5 Claims

ABSTRACT OF THE DISCLOSURE

A floor mounting assembly for use in movable partition structures and the like designed to receive and support panel members including a first L-shaped section having a base portion for supporting a panel member and also including a second L-shaped section having a base portion cooperating with the base portion of said first section to enable the side portions of each section to rigidly embrace opposite sides of the panel member inserted between the two L-shaped sections.

This is a division of application Ser. No. 460,964 filed June 3, 1965, now Patent No. 3,358,411.

The instant invention relates to construction materials and more particularly to a novel ceiling channel assembly for interior movable partitions and the like which are employed in buildings, factories and homes wherein the ceiling channel partition has fewer parts than prior art devices and hence is simpler to manufacture and to use in the assembly of such movable partition structures.

Movable partition structures are well known in the prior art. One typical type of such structures is set forth in detail in copending application Ser. No. 201,020, now Patent No. 3,276,175 entitled "Movable Partition," filed June 8, 1962 by H. L. Birum and assigned to the assignee of the instant invention. Conventional partitions of this type are typically comprised of a substantially U-shaped ceiling channel which is secured to the ceiling by any suitable fastening means. The ceiling assembly is further comprised of a pair of clips having an upper pair of cooperating arms which embrace the arms of the U-shaped channel and a lower pair of cooperating arms which embrace the upper horizontal marginal edge of the wall panel or partition panel to be inserted therebetween. These clips are secured to one another by any suitable fastening means. In order that the final structure have a superficially aesthetic appearance, a pair of plates are provided which are secured to the clip members by means of suitable projections along the interior surfaces of the plates which are force-fitted into grooves provided within the clips by means of suitable spring clip members. The floor channel assembly is quite similar in design to that of the ceiling channel. From the above description, it can clearly be deduced that the ceiling channel assembly is comprised of a minimum of six different components which comprise the final finished assembly. The necessity for so many separate components for the ceiling channel assembly makes the assembly disadvantageous from the viewpoint of manufacturing and inventory of all components, as well as from the viewpoint of assembly of the ceiling channel assembly on the job.

All of the above disadvantages are overcome by the ceiling channel assembly of the instant invention which is comprised of only two separate components, thereby greatly simplifying the manufacturing procedures, the stocking for inventory problems, transportation and most importantly, the mounting of such ceiling channel assemblies on the job.

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The ceiling channel assembly of the instant invention is comprised of a substantially U-shaped channel member having a substantially central portion with two depending arms extending outward substantially at right-angles from the central portion in the same direction. The arms of the channel member are bent slightly inward so as to form slightly less than a right-angle with the central portion of the channel. The interior surface of one arm is provided with a substantially J-shaped projection running the entire length of the channel, with its projection being positioned a spaced distance above the free marginal edge of the arm and being substantially parallel to this marginal edge.

The interior surface of the opposite channel arm is provided with a plurality of spaced parallel grooves positioned above and substantially parallel to the free marginal edge of the associated channel arm.

The remaining component of the ceiling channel assembly is an elongated substantially rigid bar having a substantially wedge-shaped cross-sectional configuration, such that the bar is tapered at a first end thereof, widening to a substantially flat surface on both sides of the bar with both flat surfaces being provided with a plurality of spaced parallel grooves running the entire longitudinal length of the wedge-shaped bar.

The steps employed in the use of the ceiling channel assembly are substantially as follows:

The substantially U-shaped channel member is first secured to the ceiling or other structure of the room in which the partition is to be mounted. The floor channel assembly is then secured in a like manner. The panel which is to be inserted between the two channel assemblies is then positioned into place by tilting the panel so as to position the upper marginal edge between the depending arms of the ceiling channel. The partition panel is then moved still further upward until its lower marginal edge clears the floor channel assembly and may then be dropped into place between the clips of the floor channel assembly. The floor channel assembly clips may then be tightened by suitable fastening means.

The elongated wedge-shaped bar is then force-fitted with its tapered edge being inserted between the channel arm provided with the grooves and the partition panel. The elongated wedge-shaped bar is then further force-fitted between the depending arm and the partition panel until it "snaps" into place indicating that the projections provided along one surface of the wedge-shaped bar have engaged the associated grooves along the interior surface of the depending channel arm. Since the depending arms of the ceiling channel member are bent slightly inward, they cooperate with the wedge-shaped member which is force-fitted into position, and which has urged the depending arms of the channel members slightly outward to very rigidly secure the partition panel therebetween. The wedge-shaped member which bears against the interior surface of one depending arm, and the substantially J-shaped projection on the interior surface of the remaining depending arm, space the lower marginal edges of the arm slightly away from the panel positioned therebetween creating a slight shadow effect.

The exterior surface of the channel member depending arms is finished in such a manner as to provide an aesthetically pleasing appearance for the ceiling channel assembly which frames the partition panel.

The major advantage of employing the wedge-shaped member lies in the fact that the ceiling channel assembly can accommodate partition panels of varying thicknesses. It has been found that partition panels of the same type may have thicknesses varying up to $\frac{1}{4}$ " and possibly more, thereby preventing the use of a single U-shaped channel member which would not provide the tolerance latitudes as that provided by the device of the instant

invention. For example, if the panels inserted into the ceiling channel assembly vary by as much as $\frac{1}{16}$ " in thickness, the panel members having the greatest thickness could not be force-fitted into such a single channel member. With the instant invention the space between the arms of the channel of the ceiling channel member is sufficient to receive panel members having thicknesses which vary substantially more than $\frac{1}{16}$ " without any force-fitting of the panel member being required. The wedge-shaped member, when properly inserted, acts to firmly position and support the panel members after they have been inserted into the ceiling channel member.

Another important advantage of the ceiling channel assembly of the instant invention is that vertical batten members which are positioned between adjacent vertical edges of panel members may have their top edges positioned under the marginal edges of the ceiling channel member. This greatly reduces the amount of care which must be exerted in cutting the vertical battens to length since their top edges will be hidden beneath the marginal edges of the channel member arms.

The ceiling channel is further provided with a pair of L-shaped projections arranged along the interior surface of the channel member base portion. These projections may slidably receive one arm of an L-bracket for securing the channel member to a wall when the channel assembly is used for vertical applications and further, the L-shaped projections may receive a short alignment strip for very accurately aligning two adjacent ceiling channel sections.

The instant invention is further comprised of a novel floor channel assembly which permits panel members to be inserted into the ceiling channel assembly with a minimum amount of tilting of the panel member being required for positioning each panel member.

The floor channel assembly is composed of a first clip arm which is mounted and integrally formed with a pedestal portion. A second L-shaped member is designed to mate with the first L-shaped member and is secured thereto by means of suitable threaded fastening members which are received between a pair of cooperating projections with the interior surface of one projection having a pair of parallel aligned grooves and with the interior surface of the remaining projection having a single groove. All the grooves are employed for the purpose of aiding in threadedly engaging the fastening member between the pair of cooperating projections.

The base clip is mounted with its pedestal firmly secured within a floor channel member having a base portion and a pair of channel arms which are bent slightly inwardly toward one another. The base clip first member is positioned within the floor channel member so that its pedestal rests upon the base portion of the floor channel member. The inwardly bent arms of the floor channel member act to firmly position and support the base clip first member without the need of additional fastening means.

In actual assembly the ceiling channel member is then mounted to the ceiling and the panel members may then be positioned with their lower marginal edges resting on the base clip first member and with their upper marginal edges embraced by the ceiling channel member. Each base clip is preferably 6" in length and two or more base clips may be employed for supporting a typical 4' x 8' panel member. Once the panel members have been properly positioned, the second L-shaped member of the base clip assembly may then be threadedly engaged to the first base clip member, thereby firmly embracing the panel member between the upwardly extending arms of the base clip assembly. A cover plate, preferably formed of a somewhat resilient plastic material and having a clip-like projection along its interior surface is very simply and readily secured to the base channel assembly by being clipped to one upwardly extending arm of the floor channel member. The opposite side of the partition assembly may be finished in substantially the identical manner. The primary

advantage of the novel base clip described immediately above is that the need for lifting the lower marginal edge of the panel member above the floor channel assembly is substantially completely avoided, thereby enabling the partition assembly to receive panel members of lengths which are substantially greater than panel members which may be received in partition structures using conventional floor channel assemblies.

It can clearly be seen from the assembly steps that the ceiling channel assembly is very simple to use on the job site and yields a very aesthetically pleasing finished product. The channel member and the elongated wedge-shaped rods may be formed of any suitable material, such as, for example, aluminum, and may be formed by an extrusion process to provide a relatively inexpensive ceiling channel.

It is therefore one primary object of the instant invention to provide a novel partition assembly.

Another primary object of the instant invention is to provide a novel floor channel assembly for use in interior partition structures and the like.

Still another object of the instant invention is to provide a novel ceiling channel assembly for use in interior partition structures and the like.

Another object of the instant invention is to provide a novel ceiling channel assembly for use in interior movable partition structures and the like, which assembly is comprised of only two basic components.

Still another object of the instant invention is to provide a novel ceiling channel assembly for use in interior movable partition structures and the like, which assembly is comprised of a substantially U-shaped channel member and an elongated wedge-shaped member.

A further object of the instant invention is to provide a novel ceiling channel assembly for use in interior movable partition structures and the like wherein said channel assembly is comprised of a substantially U-shaped channel member and having a projection along the interior wall of one arm of said channel and having grooves along the interior wall of the opposite arm of said channel and further comprising a substantially wedge-shaped rod cooperating with the grooves provided in one of said channel arms to very rigidly secure the partition panel between the arms of said channel member.

Another object of the instant invention is to provide a novel ceiling channel assembly for use in interior movable partition structures and the like wherein said channel assembly is comprised of a substantially U-shaped channel member and having a projection along the interior wall of one arm of said channel and having grooves along the interior wall of the opposite arm of said channel and further comprising a substantially wedge-shaped rod cooperating with the grooves provided in one of said channel arms to very rigidly secure the partition panel between the arms of said channel member with the arms of said channel member being bent slightly inward to provide a rigid holding force upon the partition panel when said wedge-shaped member has been "snapped" into place.

Still another object of the instant invention is to provide a novel floor channel assembly for use in interior movable partition structures and the like wherein said assembly is comprised of first and second base clip members with said first base clip member having a base portion and an upwardly extending arm positioned upon a pedestal and wherein said second base clip member has an upwardly extending arm which cooperates with the arm of the first base clip member to embrace a partition panel when the two elements of the base clip assembly are joined together.

Still another object of the instant invention is to provide a novel floor channel assembly for use in interior movable partition structures and the like wherein said assembly is comprised of first and second base clip members with said first base clip member having a base portion and an upwardly extending arm positioned upon a pedestal and wherein said second base clip member has an upwardly

extending arm which cooperates with the arm of the first base clip member to embrace a partition panel when the two elements of the base clip assembly are joined together with the second member of the base clip assembly being the last member to be assembled, thereby simplifying installation of partition panels in movable partition structures.

These and other objects of the instant invention will become apparent when reading the accompanying description and drawings in which:

FIGURE 1a is a perspective view showing a typical section of the ceiling channel designed in accordance with the principles of the instant invention.

FIGURE 1b is a perspective view of a section of the wedge-shaped member for use with the channel member of FIGURE 1a.

FIGURES 2a-2d are end views for use in describing the method of assembly of the ceiling channel structure.

FIGURE 3 shows a side view of a movable partition structure of the type shown in FIGURES 2a-2d.

FIGURE 4a is a perspective view of a base clip designed in accordance with the principles of the instant invention.

FIGURE 4b is an end view of a floor mounting assembly employing the novel base clip of FIGURE 4a.

Referring now to the drawings, FIGURE 1a shows a ceiling channel member 10 designed in accordance with the principles of the instant invention and which is comprised of a substantially flat central portion 11 having two arms 12 and 13 depending therefrom. It should be understood that this substantially U-shaped channel member 10 is an elongated member which may be of any desired length such as 10 or 20 feet long, and that only a small section of the channel member has been shown herein for purposes of simplicity, the exact length of the channel member being dependent upon the needs of the user.

The interior surface 11a of central portion 11 is provided with two substantially L-shaped projections 14 and 15 which are arranged in spaced parallel fashion and extend the entire length of the channel member. These projections are provided for the purpose of inserting a flat strip to align the ends of adjacent sections and also for receiving an angle clip to anchor at end walls or, if used vertically, to anchor at floor, which arrangements will be more fully described.

In installations where it is desired to minimize the amount of sound, vibrational noise and the like between the two areas being partitioned off, the channel member may be modified in the manner shown in FIGURE 2d. As shown therein, the central portion 11a has its exterior surface provided with a flat elongated groove running the entire length of the channel member which is designed to receive a resilient pad 60 which may be formed of sponge rubber or some other suitable material. The pad 60 is designed to be substantially thicker than the depth of the groove 11b so that the pad is substantially compressed when the channel member is secured to the ceiling. The resiliency of the pad allows it to conform to the ceiling and any irregularities that may be present within the ceiling thereby providing an extremely good sound seal to prevent the passage of noise through the partition assembly.

The interior surface 12a of depending arm 12 is provided with a substantially J-shaped projection 16 which is integrally formed with arm 12 at 17, with the free end 16a of projection 16 extending in the upward vertical direction. The depending arm 12 is bent slightly inward so that it forms slightly less than a right angle with the central portion 11 of the channel member.

The remaining depending arm 13 also forms slightly less than a right angle with the central portion 11 of the channel member and has a plurality of spaced parallel grooves 18 and 19 running the entire length of the channel member and having a substantially semi-circular cross-sectional configuration.

The exterior surfaces 12b and 13b of depending arms 12 and 13, respectively, are finished in any suitable manner so as to yield an aesthetically pleasing outward appearance. The finish may be provided by any suitable polishing operation so as to provide a shiny, dull or any other type of finish desired. The channel member may be formed of any suitable material such as, for example, aluminum and may be formed through an extrusion process since its simplicity of design makes such a manufacturing process most advantageous.

FIGURE 1b is a perspective view showing the elongated wedge-shaped rod 20 which is employed with the channel member 10 of the instant invention. Although only a very short section of rod 20 is shown in FIGURE 1b, it should be understood that this member may be of any length depending only upon the needs of the user. The member 20 has a substantially wedge-shaped cross-sectional configuration comprised of a substantially tapered portion 21 which is narrow along edge 22 and widens to form the substantially flat opposing surfaces 23 and 24 which form the lower wide-shaped edge 25. Each of the flat surfaces 23 and 24 is provided with a plurality of grooves 26-27 and 28-29 which are arranged in substantially spaced parallel fashion and extend the entire longitudinal length of the wedge-shaped member 20. The projections 26-29 have a substantially semi-circular configuration and the spacing S between projections 26 and 27 and between projections 28 and 29 is substantially equal to the spacing S between the grooves 18 and 19 provided along the interior surface 13a of depending arm 13 for a purpose to be more fully described. The simplicity of design of the substantially wedge-shaped rod lends itself readily to being produced by an extrusion process. While one preferred material used for producing the member 20 is aluminum, it should be understood that any other suitable metallic or plastic material may be employed.

Reference will now be made to FIGURES 2a through 2d which set forth the developmental procedure in the assembly of a partition structure. The steps of assembly are as follows:

FIGURE 2a shows the movable partition structure 30 which is comprised of the ceiling channel member 10. The channel member 10 is secured to a ceiling or other suitable structure by means of a plurality of fastening members 32, only one of which is shown for purposes of simplicity. The fastening members are positioned between projections 14 and 15 at spaced intervals along the channel.

The floor mounting assembly 40 (note especially FIGURE 2d) is comprised of a substantially U-shaped channel member 41 provided with suitable apertures at spaced intervals along its length, such as the aperture 42, for example, for receipt of suitable fastening means 34 for securement to the supporting surface 33. The arms 41a and 41b of channel member 41 are bent towards one another slightly, for a reason to be more fully described. Mounted upon channel member 41 is a mounting clip 43 of substantially U-shaped profile and having a suitable aperture 43a at its base for cooperating with the aperture 42 in channel member 41 for securement thereof to the supporting surface 33, by means of fastening member 34. The clip member 43 is bent so as to form two channels 44 and 45 therein, said channel having suitable apertures 44a and 45a for receipt of fastening means 46. The upper arms 44b and 45b extending above channels 44 and 45, respectively, are provided for clamping the vertically aligned panel member 50 therebetween. It should be noted that the mounting clip 43 may be formed of any suitable material sufficient to give adequate supporting and positioning strength to the vertically aligned panel member 50, while at the same time completely ignoring the aesthetic appearance of the mounting clip 43, as will be more fully described. In order to provide an overall aesthetic appearance for the mounting assembly 40 of

FIGURE 2d, the cover plates 47 and 48 are provided, which may be made of any suitable material, such as for example, a rigid plastic material, or even an aluminum material if desired. Since both clips are identical in structure and function, only one will be described herein for the purpose of simplicity.

The cover plate 47 has a main body portion 47a, having an upper flanged portion 47b extending therefrom and towards the vertically aligned panel member 50. Near the bottom edge thereof and along the inside surface is provided a substantially S-shaped projection 47c extending from body portion 47a. The configuration of the projection 47c is such that with the mounting plate 47 positioned as shown in FIGURE 2d, projection 47c captures between its lower end and between the inner wall of main body portion 47a the arm 41a of channel member 41. Projection 47c is so constructed as to provide a forced fit for the channel arm 41a. Since the channel arm 41a is bent towards the direction of the cooperating channel arm 41b, this causes the upper end of mounting plate 47 to be urged in the direction shown by arrow 41d, thereby causing the upper flange 47b to bear against the surface of vertically aligned panel 50. In this manner, the mounting plate 47 is not dependent upon the complete flatness of the supporting surface in order to provide an easily mountable mounting plate, which is not the case with prior art structures. This is provided for by constructing the channel arms 41a and 41b to be of a length sufficient and the projections 47c to be of a configuration sufficient so as to completely overcome any unevenness of the supporting surface 33.

In order to effectively seal the region bounded by the cover plates 47 and 48, the upper flange 47b is provided with a substantially flexible marginal portion 47d which, upon the slightest pressure is adapted to yield, thereby conforming exactly to the surface upon which it bears. This has the feature of completely closing any spacing between the upper flange 47b and the adjacent surface of the vertically aligned panel member 50. A further advantage can be seen when considering FIGURE 3 which shows the completed assembly 30 of FIGURES 2a-2d cooperating with an intersecting vertical mounting batten assembly 49. Since the cover plate of the vertically aligned intersecting mounting assembly 49 extends outwardly somewhat from the surface of the vertical panel member 50, the flexible portion 47d of the mounting plate 47 curves around the edges thereof thereby providing a neat and completely sealed partition assembly. As a further advantage, it should be noted in FIGURE 3 that the vertical mounting clip 41 extends slightly below the flange 47b and therefore need not be cut to an exact size as long as it is cut to a length sufficient so that its lower edge lies below the flange 47b. Thus, it is evident that with the cover plate 47 in the proper position, any deviation in the length of the vertically aligned mounting assembly 49 is of no consequence so long as its lower edge lies at least some distance below the upper flange 47b.

The lower edge of body member 47a of cover plate 47 is likewise provided with a flexible tip 47e which upon the slightest pressure applied thereto is adapted to yield to the surface applying such pressure. Thus, with the supporting surface 33, as shown in FIGURE 2d, the flexible tip 47e is bent almost completely at a right angle. However, it should be appreciated that with the uneven surface condition this flange 47e will be in a position 47e' as shown in dotted fashion in FIGURE 2d, thereby completely sealing any open spacing between the lower edge of the cover member 48 and the supporting surface 33.

After the ceiling channel member 10 and the floor channel 41 and clip 43 have been suitably positioned, the partition panel 50 is tilted at an angle shown in FIGURE 2a so that its upper end 50a may be inserted between the depending arms 12 and 13 of channel member 10. The partition panel 50 has been sectionalized for purposes

of simplicity, it being understood that the vertical length of the panel member 50 is dependent upon the height of the room in which it is being used.

The panel 50, after having its upper edge 50a positioned between depending arms 12 and 13, is moved substantially upwardly in a direction shown by arrow 35 so that the upper edge 50a approaches the interior surface 11a of the channel member central portion 11.

The panel member 50 is urged in the direction shown by arrow 35 until its lower edge 50b clears the upper marginal edges of clip 43. As soon as the lower edge 50b of panel 50 clears clip 43, the lower end of panel 50 is then moved in the direction shown by arrow 36 until the panel is positioned in a substantially vertical alignment, as shown in FIGURE 2b, with its lower edge 50b being positioned immediately above floor assembly clip 43. Once the panel member 50 is positioned in the manner shown in FIGURE 2b, it is then moved in the downward vertical direction, as shown by arrow 37 so that its lower edge 50b rests upon the horizontal portions 43a and 43b of clip 43. At this time the lower edge of panel 50 occupies the position 50b' shown by the dotted lines. The fastening means 46 for clip 43 may then be suitably tightened so that the upper arms 44b and 45b rigidly embrace the opposite lower marginal edges of panel 50.

Turning to consideration of FIGURE 2c, the elongated wedge-shaped rod 20 is force fitted between surface 50c of panel member 50 and depending arm 13 of ceiling channel member 10. The wedge-shaped member is positioned so that its tapered portion 21 enters the space between panel 50 and arm 13 first.

Depending arms 12 and 13 of ceiling channel member 10, being bent slightly inwardly toward one another, resist the insertion of the wedge-shaped member 20, requiring the wedge-shaped member to be force fitted therebetween. The wedge-shaped member is continually urged in a substantially vertically upward direction until the projections 28 and 29 (or 26 and 27) are in alignment with the grooves 18 and 19 provided along the inner surface of depending arm 13. As soon as the projections and grooves are in alignment, the wedge-shaped member "snaps" into place with a noticeable audible indication. It should be noted that the desired force fit is obtained by dimensioning channel member 10 so that the arms 12 and 13 are spaced by a distance which is relatively less than the combined thickness of the panel member 50 and the wedge-shaped member 20. Such relative dimensioning is well within the purview of one with ordinary skill in the art and the dimensions of the channel member arm spacing, panel member thickness and wedge member thickness may be adjusted in any suitable fashion to obtain the desired force-fit.

The completed assembly 30 is shown in FIGURE 2d. It will be noted that, after the wedge-shaped member 20 is properly positioned, there is a slight spacing between the surface 50c of partition panel 50 and the interior surface 13a of arm 13, creating a pleasing "shadow effect." In order that the opposite surface of the wall partition assembly 30 be substantially identical in appearance, the interior surface 12a of depending arm 12 is provided with the substantially J-shaped projection 16 which bears against surface 50d of partition panel 50 in the same manner as wedge-shaped member 20 bears against surface 12a and surface 50d of panel 50. Thus, both sides of the partition assembly 30 appear identical to one another. The opposite set of projections 26 and 27 (or 28 and 29) due to the force fitting of wedge member 20, very rigidly engages surface 50c of partition panel 50 aiding and firmly maintaining the vertical positioning of panel member 50. The exterior surfaces 12b and 13b of arms 12 and 13, respectively, being finished in any suitable manner provided an aesthetically pleasing framing for the panel 50. The exposed surfaces of the panel 50 may be finished in any suitable manner so as to yield a wood grain effect or may be finished in any solid color,

pattern, and the like, depending only upon the needs of the user.

The floor channel assembly 40, which is well known in the art, is finished by providing the side plates 47 and 48 which have their exterior surfaces finished in any suitable manner so as to provide an aesthetically pleasing framing for the panel along the floor. Plates 47 and 48 are secured in the manner previously described and covered in detail in copending application Ser. No. 201,020 referred to above.

The further advantage of the ceiling channel assembly of the instant invention can best be appreciated from a consideration of FIGURES 2d and 3. FIGURE 3, for example, shows a partially sectionalized view of a movable partition installation comprised of panels 50, 50' and 50''. Vertical batten or mounting assemblies described in previously mentioned application Ser. No. 201,020 and designated by the numeral 49 in FIGURE 3, are employed for filling the space between adjacent panel members. The cover plate of the vertical assembly has its lower edge 49a concealed by the upper marginal edge 47b of cover plate 47 in the manner previously described. The upper marginal edge 49b of vertical batten cover plate 49 extends upwardly so as to be positioned behind the lower marginal edge of ceiling channel arm 12. Since both the upper and lower edges of the vertical batten cover plate are completely concealed this permits the cover plate to be cut to size without any high degree of accuracy so long as its overall length is greater than the distance D between the lower marginal edge of the ceiling assembly and the upper marginal edge of the floor assembly. Also, the vertical batten cover plate need not be finished at its upper and lower marginal edges, but may have a rough finish (i.e., a rough cut) since both upper and lower marginal edges will be completely concealed.

FIGURE 3 shows two ceiling channels 10 and 10' which abut one another. In order to greatly simplify alignment between the two channels, an alignment strip 61 has one end thereof inserted between the projections 14 and 15 provided along the interior surface of the base portion 11 of the channel member. The next ceiling channel section is then positioned along the ceiling with its projections 14 and 15 receiving the opposite end of alignment member 61. The lastly positioned channel member may be nailed or otherwise secured to the ceiling.

The ceiling channel assembly 10 may also be used in a vertical position such as that shown on the left-hand end of FIGURE 3. This channel assembly 10'' is designed to receive the left-hand vertical marginal edge of panel 50 in the same manner in which it receives any top horizontal marginal edge. In order to secure the vertically aligned channel assembly 10'', angle brackets 62 and 63 have their vertically aligned arms positioned between the projections 14 and 15 (see FIGURES 2a-2d) of the channel assembly. The horizontally aligned arms of the angle brackets 62 and 63 are then nailed, or otherwise secured to the ceiling and floor, respectively. Additional fastening means may be used at spaced intervals along the ceiling channel assembly to secure it to the vertical wall, if desired. The partition panel 50 may then be inserted into the channel assembly 10'' with the wedge-shaped member then being positioned in the same manner as previously described. Thus, it can be seen that the ceiling channel assembly is sufficiently flexible to allow its use in vertically aligned applications as well as along the ceiling of a room.

FIGURES 4a and 4b show a preferred floor mounting assembly 100 which may be employed in place of the assembly 40 of FIGURES 2a-2d. As shown in FIGURE 4a, the assembly 100 is comprised of first and second base clip members 101 and 102, respectively. Base clip member as an upwardly extending arm 103 integrally formed with a base portion 104. The base portion is supported upon a pedestal 105 having a vertically aligned rib 106 joining base portion 104 to pedestal 105. The right-hand

portion of base 104 is provided with two projecting portions 107 and 108. The interior surface of projection 107 is provided with an elongated V-shaped groove 107a. The interior of projection 108 is provided with a plurality of V-shaped grooves 108a. The grooves 107 and 108a cooperate to permit threaded engagement with a threaded fastening member in a manner to be more fully described.

The second base clip member 102 is a substantially L-shaped member having an upwardly extending arm 109 and a horizontally aligned arm 110. The exterior surface of arm 109 is provided with an elongated V-shaped groove 109a extending the length of member 102 for the purpose of aiding in the drilling of openings 109b and 109c, respectively.

Considering FIGURES 4a and 4b in light of the assembly step FIGURES 2a-2d, the novel base clip assembly 100 may be utilized in the following manner:

The ceiling channel is secured to the ceiling in the same manner as previously described. The floor channel employs a continuous floor channel member 41 substantially identical to the floor channel 41 shown in FIGURES 2a-2d. Its upwardly extending arms 41a and 41b are bent slightly inwardly in the same manner as previously described. The channel 41 is secured to the floor 33 by suitable fastening members such as the fastening member 34, which are arranged at spaced intervals along channel 41.

The pedestal 105 of first base clip member 101 is then inserted between the upwardly extending arms 41a and 41b of the floor channel 41. The width of pedestal 105 is just slightly less than the distance between the interior surfaces of arms 41a and 41b so that the floor channel 41 firmly anchors the base clip first member 101 therein. A plurality of such members 101 are arranged along spaced intervals of the floor channel 41. The length of member 101 (and also of member 102) is preferably 6'', but any other suitable length may be used. The distances between adjacent members 101 may be closed, depending upon the needs of the user. Considering FIGURE 3, it can be seen that two such base clip assemblies are employed to support one panel member plus the edges of two adjacent panel members. If desired, however, more of such clips may be employed to support each partition panel.

After the base clip first member 101 are adequately positioned and firmly anchored by the floor channel 41, the partition panels are then inserted so that their upper edges are placed between the downwardly extending arms of the channel assembly so that their lower edges rest upon the base portion 104 of member 101. It can clearly be seen that the partition panel need not be tilted to position it, nor need it be lifted up about arm 103, but may just be placed upon the base 104 since the base clip second member 102 has not yet been assembled or secured to the partition structure.

In this position the partition panel is adequately supported by base clip first member 101 and is prevented from swaying at its upper end due to the ceiling channel assembly. The base clip second members 102 may now be secured to the floor mounting assembly. Preferably two holes 109b and 109c are drilled at spaced intervals along the V-shaped groove 109a or arm 109. The V-shaped groove 109a accurately locates the holes for the purpose of aligning fastening members with the opening formed by the pair of projections 107 and 108. Once the holes 109b and 109c are drilled, threaded fastening members such as, for example, the threaded fastening member 113, are inserted into the openings 109b and 109c and are rotated preferably by means of a screw driver for the purpose of threadedly engaging first member 101 so as to firmly secure second member 102 thereto. V-shaped groove 107a cooperates with plural grooves 108a to provide a means for easily starting the threaded engagement. V-shaped grooves 108a act to expedite the threading of

fastening member 111 between the pair of projections 107 and 108.

The distance K between the right-hand edge of projections 107-108 and arm 103 is substantially less than the distance of the thinnest panel which the base clip members are designed to embrace, and thereby enable arms 103 and 109 to tightly embrace a partition panel 50 simply by tightening threaded members 111.

Once this step has been completed, the cover plates 47 and 48 are then mounted. Cover plates 47 and 48 are identical to those described previously and shown in FIGURE 2d. The inwardly bent arms 41a and 41b of floor channel 41 act to insure that the upper flanges of cover plates 47 and 48 will bear against the opposing surfaces of partition panel 50. It can be seen that the height of cover plates 47 and 48 are sufficient so as to completely conceal floor channel 41 and base clip members 101 and 102. Cover plates 47 and 48 of FIGURE 4b are also designed to accommodate and conceal the lower edges of a vertical batten cover plate in the same manner as shown in FIGURES 2d and 3. It can clearly be seen that through the use of a two-piece base clip there is no need for the panel member to be lifted up above the edges of the floor clip such as, for example, the clip 43 shown in FIGURES 2a-2d, thereby enabling such a partition assembly to accommodate panels of greater length without any need for cutting or shortening such panels in order to place them into position.

It can clearly be seen from the foregoing that the instant invention provides a novel ceiling channel assembly comprised of only two component parts which is substantially similar than conventional ceiling channel assemblies such as, for example, the channel assembly taught in the copending application referred to above which requires no less than six different component parts. The assembly procedure is greatly simplified when compared with prior art ceiling channel assemblies and manufacturing costs for the channel assembly are also greatly reduced.

The floor channel assembly of the instant invention is designed to greatly simplify installation procedures and, per se, is easier to use and install.

Although there has been described a preferred embodiment of this novel invention, many variations and modifications will now be apparent to those skilled in the art. As one alternative arrangement the opening between projections 107 and 108, shown in FIGURES 4a and 4b may be completely eliminated and hence the grooves 107a and 108a may likewise be eliminated, with the bracket 109 being provided with an additional downwardly depending portion 112 shown in FIGURE 4b for securement to the vertical rib 106. Adequate fastening is provided by the fastening members 113 and 114. In this embodiment the length of arm 110 is selected so as to make the distance between the interior surfaces of arms 103 and 109 substantially less than the thickness of the thinnest partition panel member 50 which may be mounted between the arms 103 and 109. As still another alternative embodiment, projection 108 may be completely eliminated and fastening member 111 may be threaded through an opening 115 provided in vertically extending rib 106. Fastening arm 109 in this manner may be done independently of, or in addition to providing an additional downwardly depending arm 112.

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

1. A floor mounting assembly for use in movable partition structures and the like designed to receive and support panel members comprising;

- a first member comprised of a pedestal adapted to be fastened to a floor;
- an L-shaped bracing portion having a first base segment and a first side segment;
- a vertically extending rib joining said pedestal to substantially the center of said bracing portion base segment to form a support for a panel member;
- the base of said L-shaped bracing portion having a

substantially deep U-shaped groove; said groove having means to facilitate threaded engagement with a threaded fastening member; and

a second L-shaped member having a second base segment and a second side segment and having a plurality of apertures positioned at spaced intervals along said second side segment in alignment with said U-shaped groove when said second base segment is positioned adjacent said first base segment, said apertures being positioned to receive said threaded fastening member to rigidly embrace said panel member between said first and second side segments upon engagement with said groove, with said engagement providing the sole means of support for said second L-shaped member.

2. A floor mounting assembly for use in movable partition structures and the like designed to receive and support panel members comprising;

- a first member comprised of a pedestal adapted to be fastened to a floor;
- an L-shaped bracing portion;
- a vertically extending rib joining said pedestal to substantially the center of said bracing portion to form a support for a panel member;
- said rib having a plurality of spaced apertures;
- a second L-shaped member having a plurality of apertures positioned at spaced intervals along one arm of said second member and being in alignment with the spaced apertures of said rib when said one arm is positioned adjacent the base of said L-shaped bracing portion; and

fastening means cooperating with the openings of said rib and said second L-shaped member to rigidly embrace a panel member between said first and second L-shaped members, with said fastening means providing the sole means of support for said second L-shaped member.

3. A floor mounting assembly for use in movable partition structures and the like designed to receive and support panel members comprising;

- a first member comprised of a pedestal adapted to be fastened to a floor;
- an L-shaped bracing portion;
- a vertically extending rib joining said pedestal to substantially the center of said bracing portion to form a support for a panel member;
- said rib having a plurality of spaced apertures;
- a second L-shaped member having an additional downwardly depending arm; said arm having a plurality of apertures positioned at spaced intervals along the said arm of said second member and being in alignment with the spaced apertures of said rib when said one arm is positioned adjacent the base of said L-shaped bracing portion; and

fastening means cooperating with the openings of said rib and said second L-shaped member to rigidly embrace a panel member between said first and second L-shaped members, with said fastening means providing the sole means of support for said second L-shaped member.

4. A floor mounting assembly as defined in claim 2 wherein there is additionally included;

- a floor channel member into which said pedestal is inserted, said channel member having a pair of arms inwardly bent towards one another and a width between the interior surfaces of said arms which is slightly greater than the width of said pedestal for firmly anchoring said first member in place; and
- means for securing said channel member to the floor.

5. A floor mounting assembly as defined in claim 4 wherein there is also included a cover plate having an upper flanged portion extending therefrom and towards a vertically aligned side portion of the panel member, and also having a substantially S-shaped lower projection for insertion between said pedestal and one of said inwardly

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bent channel member arms to provide and transmit a bearing force to said upper flanged portion to be exerted on said panel member side portion.

References Cited

UNITED STATES PATENTS

3,017,672	1/1962	Vaughan	52—241
3,126,986	3/1964	Madl	52—241 X
3,217,452	11/1965	Steele	52—242

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3,231,054	1/1966	Gartrell	52—290 X
3,243,930	4/1966	Slowinski	52—732 X
3,255,563	6/1966	Sauer	52—242 X
3,261,625	7/1966	Cripe	52—239 X
3,276,175	10/1966	Birum	52—239

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