United States Patent

Brown

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[54] MOVABLE PARTITION WALL

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[52] **U.S. Cl.**.....**160/40,** 49/127, 49/488, 160/199

[51] **Int. Cl.**.....**E06b 7/16**

[58] **Field of Search** 160/199, 206, 40; 49/125, 127, 49/488, 499, 460, 462

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[57] **ABSTRACT**

In a movable partition wall consisting of a plurality of panels suspended from a ceiling track, the ceiling track is concealed by a box-like enclosure consisting of two complementary mouldings of vinyl plastic. The panels may be individual, or articulately connected in pairs or in concertina fashion. Each panel is formed with a kick plate which is combined with a flexible strip keyed to the kick plate to hide fastenings and to constitute a buffer. The edge mouldings of each panel are secured in position by being clipped into channel-shaped frame members and frictionally retained thereby.

5 Claims, 5 Drawing Figures

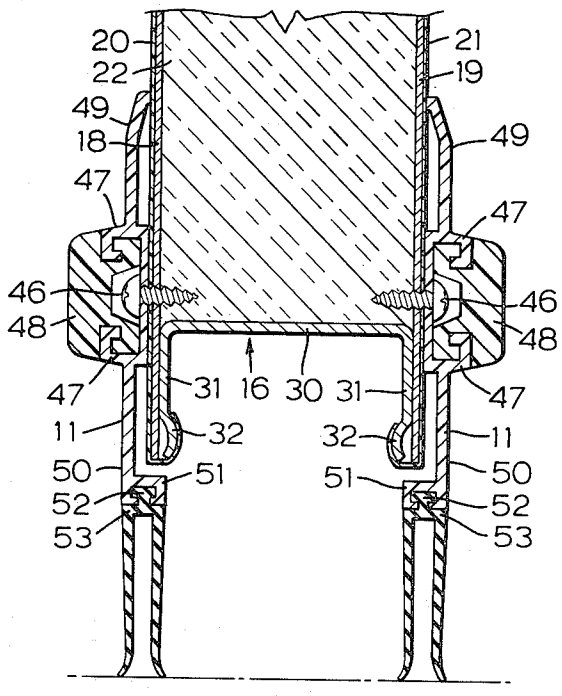
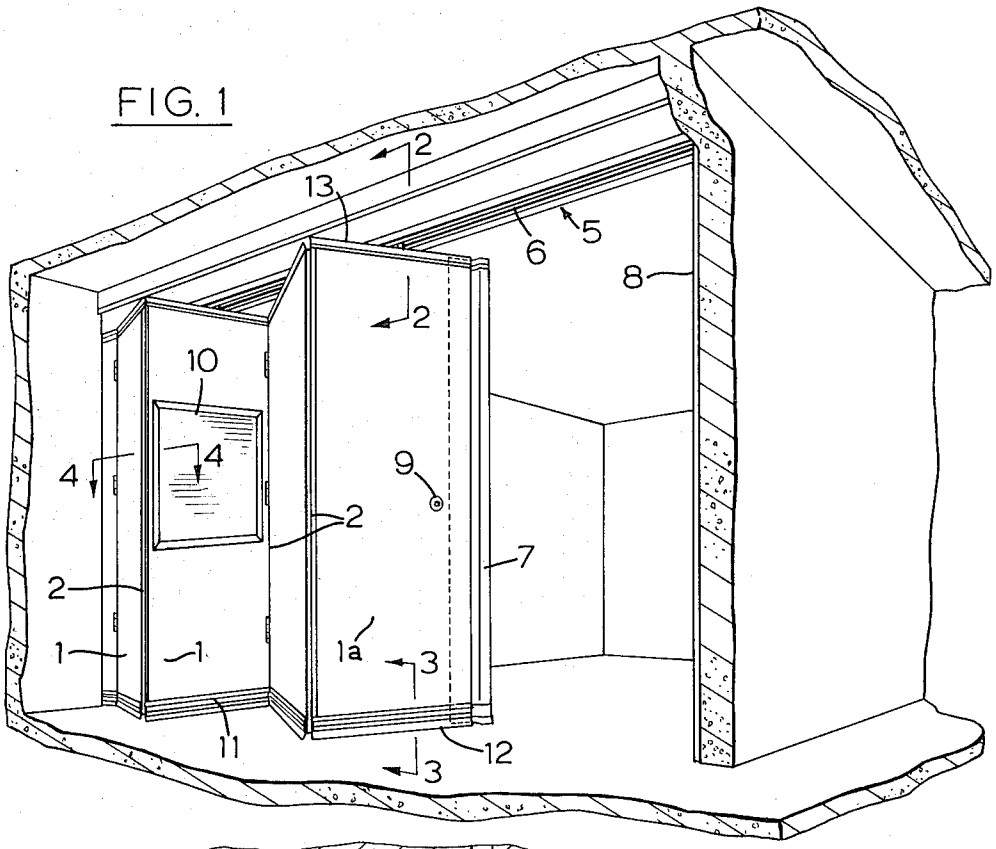


FIG. 1



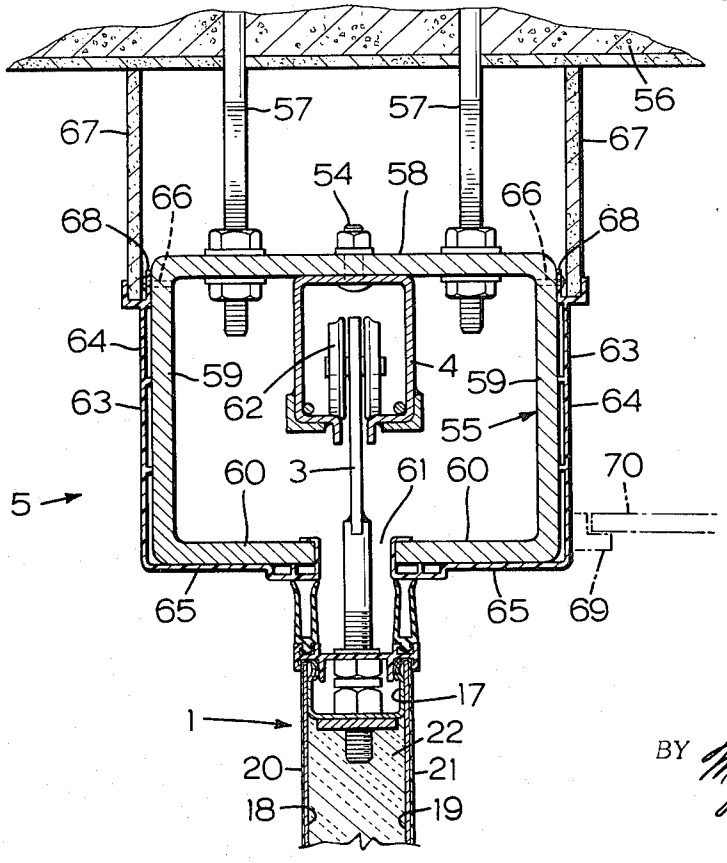


FIG. 2

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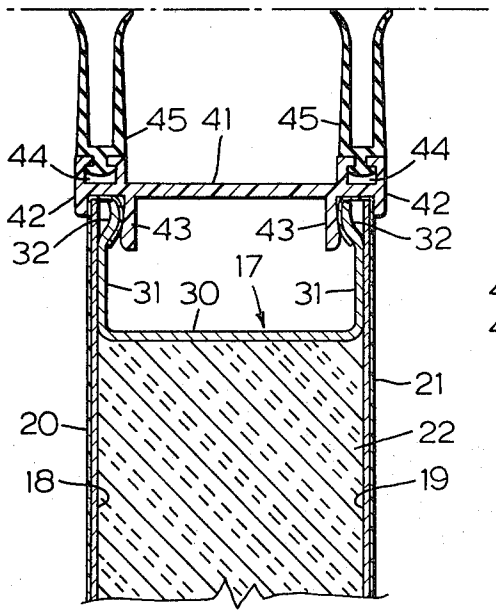


FIG. 5

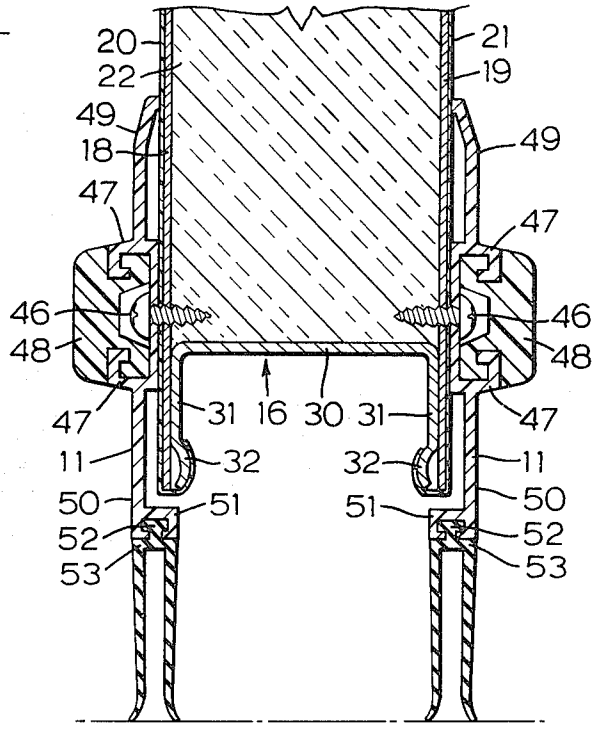


FIG. 3

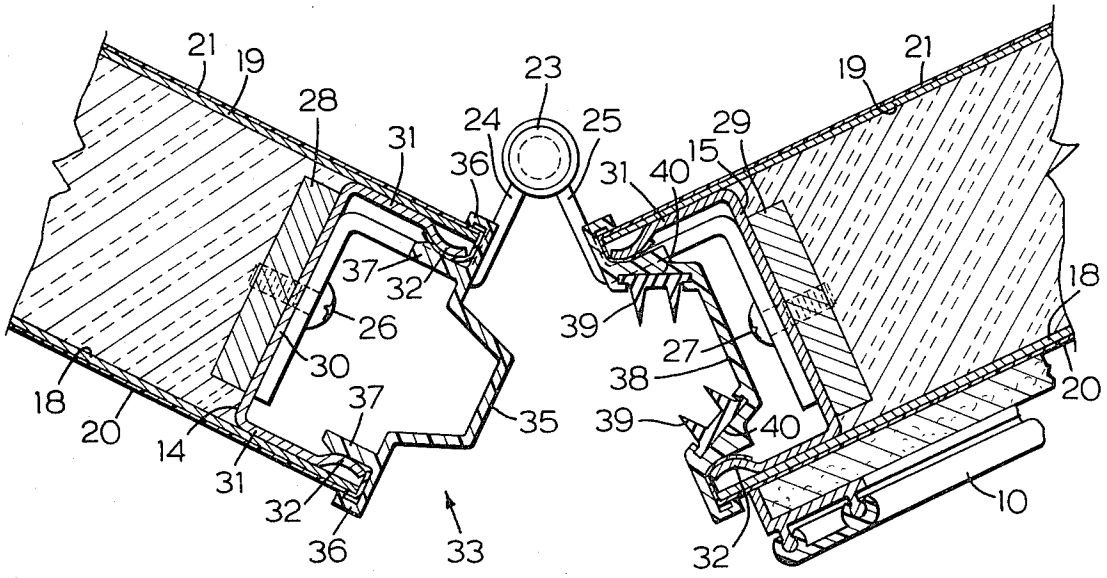


FIG. 4

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MOVABLE PARTITION WALL

This invention relates to movable partition walls of the type consisting of a plurality of panels suspended from a ceiling track, the panels being movable from an extended, edge to edge configuration to a stacked or folded, face to face, configuration. The panels may be articulately connected.

In a movable partition wall of this type it is usual to provide each of the panels with a kick plate on each of its opposite faces the kick plate being secured by means of screws or the like. It is also usual to provide resilient buffers on which lies faces of each panel for the purpose of reducing noise caused when the faces strike each other as the wall is folded. When the wall is extended, the buffers as well as the fastenings for the kick plates are untidy in appearance.

It is one object of the present invention to improve the appearance of such a partition wall by providing an improved kick plate and buffer construction.

The appearance of such a partition wall may also be marred by the exposure of the ceiling track and the structure by which it is suspended. It is possible to conceal the track and the suspension structure, but known methods of concealment are not readily adaptable to different kinds of ceiling.

It is another object of the present invention therefore to improve the appearance of a movable partition wall by providing a box-like enclosure of novel construction to conceal the ceiling track.

Still another object of the invention is to provide an improved panel construction for a movable partition wall of the type specified.

According to one aspect of the present invention, an improved kick plate for a movable partition wall of the type specified comprises an elongated metal plate extending across the full width of a respective panel face, and a resilient strip keyed into a channel on the front face of the plate and extending for the full length of the plate. The resilient strip stands proud of the front face of the plate and serves the dual purpose of concealing the fastening screws for the plate and acting as a buffer.

According to another aspect of the invention, the ceiling track is concealed by a decorative box-like structure consisting of two elongated mouldings of L-shaped cross section. The mouldings are positioned with respect to one another so as to define a slot for the passage of the panel hangers and are provided with retaining abutments for retaining the edges of adjacent ceiling panels.

According to yet another aspect of the present invention, each panel comprises a frame structure, a pair of skins defining opposite faces of the panel, the frame structure comprising at least a pair of channel sectioned frame members disposed adjacent to the vertical edges of the panel, and a pair of edge mouldings of complementary profile clipped into the channel sectioned frame members.

In order that the invention may be readily understood, one embodiment thereof will now be described by way of example with reference to the accompanying drawings, in which:

FIG. 1 is a general perspective view of a movable partition wall in a partly extended condition;

FIG. 2 is a section on line 2—2 in FIG. 1;

FIG. 3 is a section on line 3—3 in FIG. 1;

FIG. 4 is a section on line 4—4 in FIG. 1; and

FIG. 5 is a cross sectional view of the upper end of a panel.

Referring to FIG. 1, a movable partition wall for dividing an interior space such as a school auditorium comprises a plurality of panels 1 which are hinged together at adjacent vertical edges 2 so as to be foldable in concertina fashion from an extended, edge to edge, configuration to a stacked, face to face, configuration and vice versa. Each panel 1 is suspended by a hanger 3 from a ceiling track 4 (see FIG. 2), the ceiling track 4 being concealed in FIG. 1 by decorative box-like enclosure 5 having a longitudinal slot 6 through which the hangers 3 extend. At the leading vertical edge of the leading panel 1a is conventional adjustable extension piece 7, which can be extended or retracted by a removable operating handle when the partition is fully extended, so as to lock said extension piece into a cooperating keeper 8 with which it cooperates. For this purpose the operating handle keys into a rotatable member 9 for actuating the internal mechanism for extending and retracting the extension piece. Attached to the face of at least one of the panels is a tackboard 10, or alternatively a chalkboard or other functional surface.

Adjacent to the base of each panel on each face thereof is a kick plate and buffer assembly 11, which extends for the full width of the panel to form a continuous skirting when the partition is extended. Sealing strips 12 and 13 are provided at the lower and upper edges of the panels.

Referring now to the sectional views shown in FIGS. 2 to 5, each panel comprises a frame structure comprising a pair of vertical steel frame members 14, 15 (FIG. 4) disposed adjacent to the vertical edges of the panel, and a pair of horizontal steel frame members 16, (FIG. 3) and 17 (FIGS. 2 and 5) disposed adjacent to the lower and upper edges of the panel respectively. Welded to the frame members on opposite sides thereof are two steel panels 18, 19, over which are stretched sheet vinyl covers 20, 21, the edges of which are retained by the frame members in the manner shown. The steel panels and vinyl covers constitute skins which define the opposite faces of the panel.

The space between the skins is filled with a sound absorbent material such as mineral wood insulation 22.

Referring now to FIG. 4, the adjacent vertical edges of the panels 1 are articulately connected together by means of hinges 23, each hinge having a pair of hinge plates 24, 25 which are secured by bolts 26, 27 to the respective vertical frame members 14, 15 of the adjacent panels. Reinforcing plates 28, 29 are provided behind the frame members to receive the bolts.

The vertical and horizontal frame members 14, 15, 16 and 17 are all of the same construction. Each of these frame members consists of a channel-sectioned strip providing a flat web portion 30 and a pair of resiliently yieldable sidewall portions 31. Each sidewall portion 31 is formed with a longitudinally extending, inwardly protruding bead 32 providing a surface to which the respective edge of a vinyl cover is glued. The vertical edges of the panels are provided with edge mouldings 33, 34, each moulding being an aluminum extrusion. Referring to FIG. 4, the aluminum moulding 33 has an outer face providing a tongue 35 a pair of inwardly directed edge flanges 36 extending around the corners adjacent to the faces of the panel, and a pair of longitudinally extending, inwardly directed wall portions 37. The wall portions 37 are shaped to cooperate with the beads 32 by wedging between them, whereby the moulding may be clipped into the channel-sectioned frame member 14 and frictionally retained thereby. It will be noted that the glued edges of the vinyl covers 20, 21 are sandwiched between the beads 32 and wall portions 37. The aluminum edge moulding 34 is clipped into a channel-sectioned frame-member 15 in the same manner and frictionally retained thereby. Instead of being formed with a tongue the outer face of the moulding 34 is formed with a channel 38 into which the tongue 35 of the complementary moulding engages. An acoustic seal is provided by means of a pair of flexible strips 39 of soft vinyl which are retained by keyways 40 formed in the sidewalls of the channel 38.

At the upper edge of each panel an extruded aluminum retainer cover 41 is secured by the frame member 17 in the same manner. The retainer cover 41 is formed on its lower face with a pair of edge flanges 42 which overlie the edges of the panel faces, and a pair of longitudinally extending wall portions 43 which are shaped to cooperate with the beads 32 so as to be retained thereby. At the edges of the top face of the retainer cover 41 are a pair of channels 44, into which are keyed a pair of soft vinyl gaskets 45 providing acoustic seals.

At the lower edge of each panel 1, as shown in FIG. 3, is a channel-shaped frame member 16 of the construction described above, having a pair of longitudinally extending beads 32 to which the lower edges of the vinyl covers 20 and 21 are glued. The kick plates 11 are secured to the opposite faces of the panel by fixing screws 46.

Each kick plate 11 consists of an extruded aluminum plate extending the full width of the panel face. The kick plate 11 has a front face provided with a pair of ribs 47 which define a channel and are shaped to define a pair of keyways into which a soft vinyl buffer strip 48 is keyed, the buffer strip 48 standing proud of the ribs 47. The heads of the screws 46 are located in the channel defined by the ribs 47, and therefore, as will be noted, are concealed by the buffer strips. Each kick plate also provides an upwardly extending flange 49 and a downwardly depending flange 50 extending to a position below the lower edge of the panel. The flange 50 terminates in a horizontal shelf portion 51. The shelf portion has an upper face disposed beneath the lower edge of the wall panel, and a lower face formed with a longitudinally extending channel 52 into which an acoustic sealing gasket 53 of soft vinyl is keyed.

Referring now to FIG. 2, the ceiling track 4 is secured by bolts 54 to a series of longitudinally spaced, aligned brackets 55, which are suspended from a roof structure 56 by structural support members 57. Each bracket 55 is a C-shaped member having a horizontal upper portion 58, to which the bolt 54 and members 57 are secured, a pair of downwardly depending vertical side potions 59, and a pair of inwardly directed horizontal portions 60 which are spaced apart at their ends to define a gap 61 for the passage of the hangers 3. Each hanger 3 is connected at its upper end to a carriage 62 which runs on the track 4 in known manner.

The brackets 55 and support members 57 are concealed by the decorative box-like enclosure 5, which is made up of two L-sectioned mouldings 63 of rigid vinyl. Each moulding 63 has a vertical web portion 64 which lies against the respective vertical side portion 59 of the brackets, and a horizontal web portion 65 which lies against the respective horizontal portion 60 of the brackets. The mouldings 63 are each formed at their lower edge with a flange portion which extends into the gap 61 and engages over the end of the respective bracket portion to retain the moulding in position. The upper ends of the mouldings are each secured in place by means of bolts 66 fastened into the brackets.

The upper edges of the vertical web portions are moulded to provide upwardly facing channels into which the lower edges of ceiling panels 67, of gypsum board for example, may be located. Each of these channels is defined by an inner wall portion 68 which is bolted to the bracket 55, and an outer or abutment wall portion to retain said edge of the ceiling panel.

The installation illustrated in FIG. 2 may be modified by attaching angle pieces of aluminum or steel at any desired height to the sides of the mouldings 63 and 64. These angle pieces, illustrated in broken lines in the figure provide longitudinally extending support flanges 69 to provide a peripheral support for horizontal ceiling panels 70.

It will be appreciated that the structures described above and illustrated in the drawings examplify the invention and numerous modifications may be made without departing from the scope of the invention. For example, it is envisaged that the wall panels may be articulately connected as shown, or articulately connected in pairs or groups, or individually suspended. It is also envisaged that edge mouldings of the panels may be of a material other than aluminum, for example a rigid vinyl plastic.

What I claim as my invention is:

1. In a movable partition wall of the type consisting of a plurality of panels suspended from a ceiling track, the panels being movable from an extended edge to edge configuration to a stacked, face to face, configuration, each panel being provided with a kick plate on each of its opposite faces, an improved kick plate construction comprising:

an elongated metal plate extending across the full width of the respective panel face and secured thereto,

the plate having a front face provided with a longitudinally extending channel, a rear face, and a depending flange extending at least to the lower edge of the wall panel; and

a resilient strip keyed into said channel and extending for the full length of the metal plate, the resilient strip standing proud of the front face of the plate so as to form a buffer.

2. An improved kick plate construction according to claim 1, including fastening means extending through the metal plate from the front face thereof and securing the metal plate to the respective panel face, said resilient strip concealing the fastening means.

3. An improved kick plate construction according to claim 2, wherein the metal plate is of extruded aluminum.

4. An improved kick plate construction according to claim 3, wherein the resilient strip is of vinyl plastic.

5. In a movable partition wall of the type consisting of a plurality of panels suspended from a ceiling track, the panels being movable from an extended configuration to a stacked, fact to face, configuration, each panel being provided with a kick plate on each of its opposite faces, an improved kick plate construction comprising:

an elongated metal plate extending across the full width of the respective panel face and secured thereto, the plate having a front face provided with a first, longitudinally extending channel, a rear face, and a depending flange, the depending flange terminating in a horizontal shelf portion having an upper face disposed beneath the lower edge of the wall panel and a lower face provided with a second longitudinally extending channel;

fastening means extending through said metal plate from the front face thereof for securing the plate to the respective panel face;

a resilient strip keyed into said first channel and extending for the full length of the metal plate, the resilient strip concealing said fastening means and standing proud of the front face of the plate to form a buffer; and

a floor seal of flexible plastic material keyed into said second channel.

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