

April 30, 1968

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3,380,212

CLAMPED CORNER JOINT

Filed Oct. 23, 1964

3 Sheets-Sheet 1

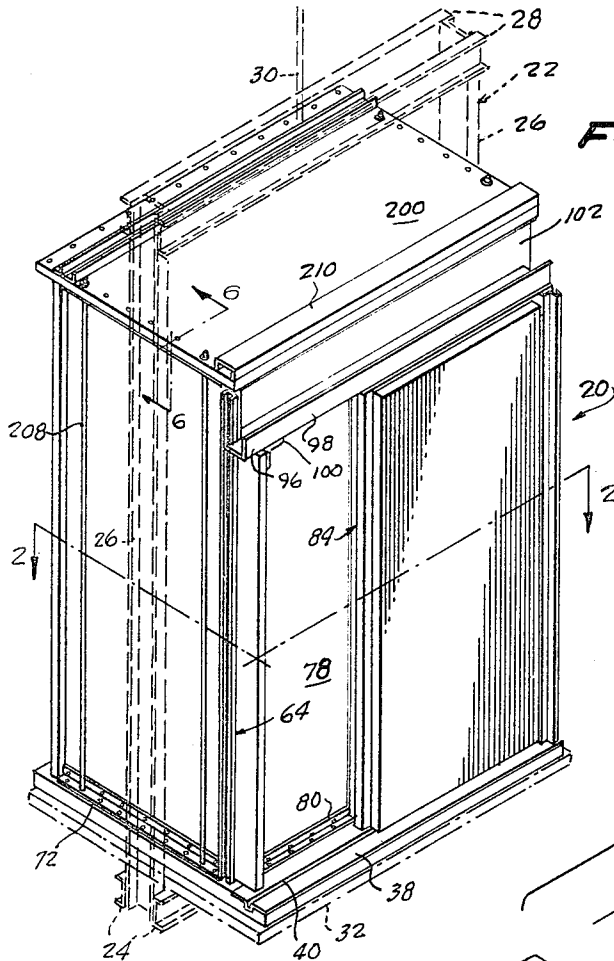


FIG. 1.

FIG. 6.

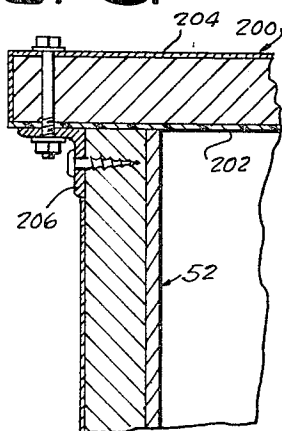
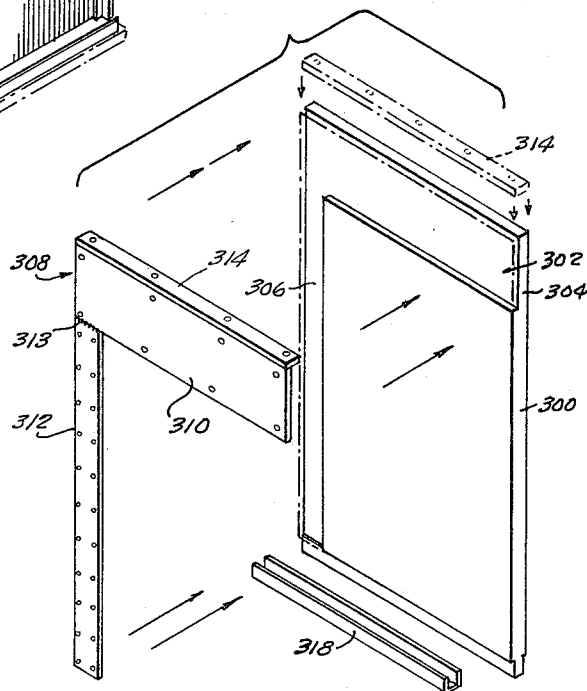


FIG. 5.



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FIG. 2.

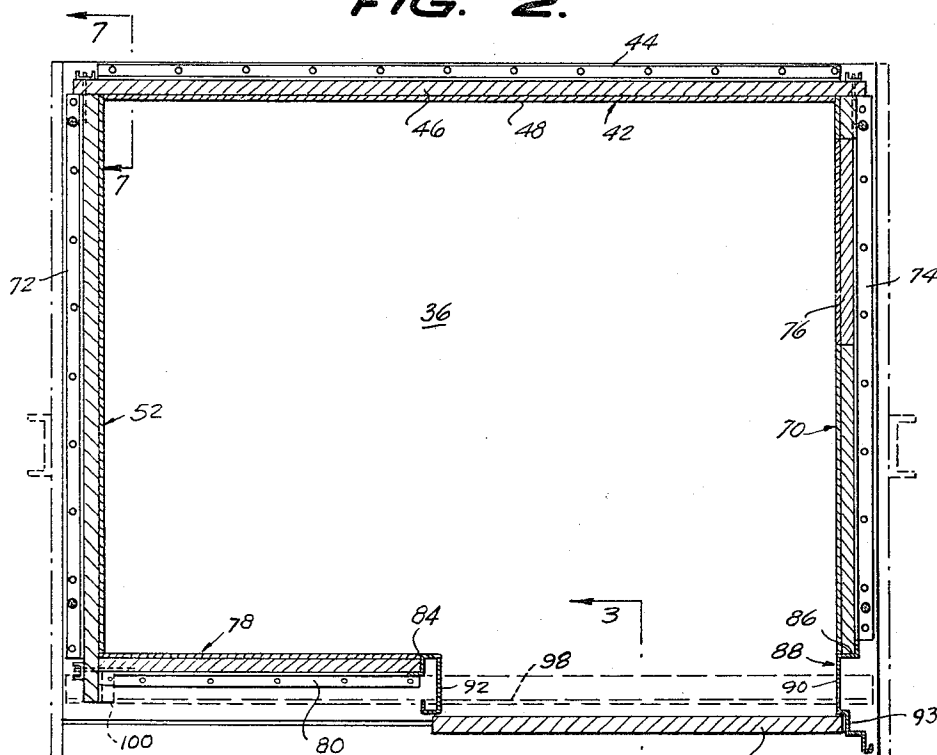


FIG. 3.

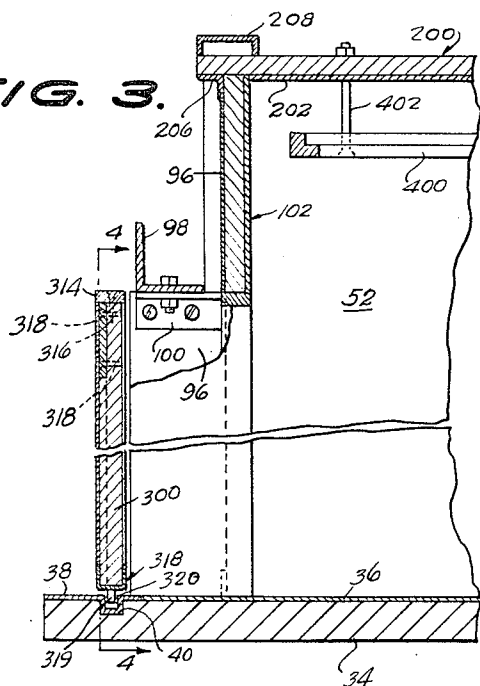
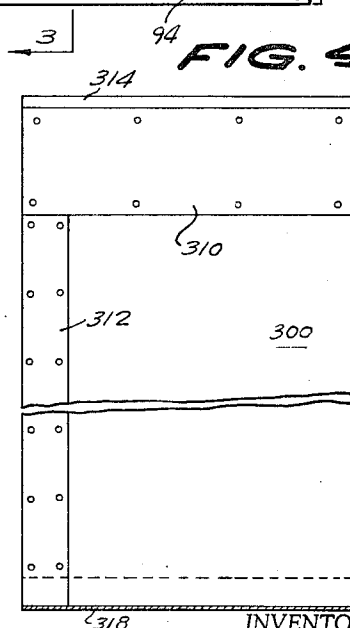


FIG. 4.



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FIG. 7.

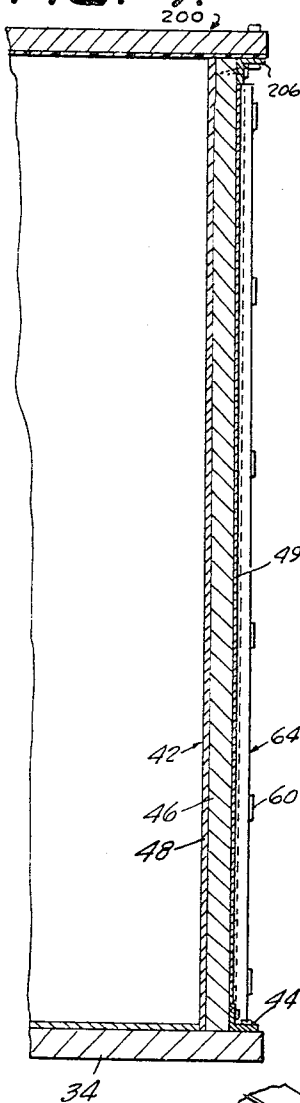


FIG. 8.

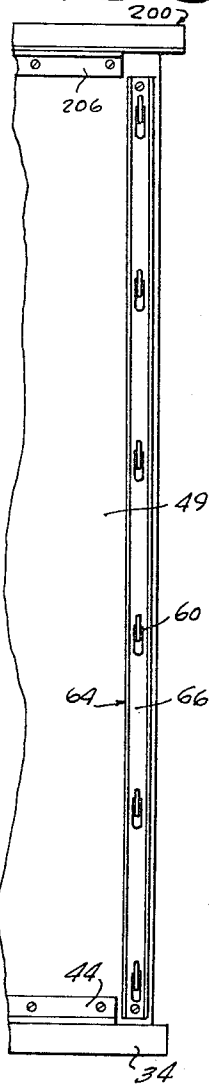


FIG. 9.

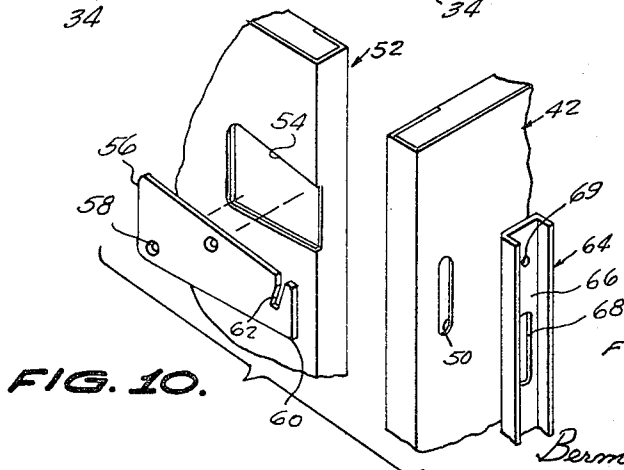
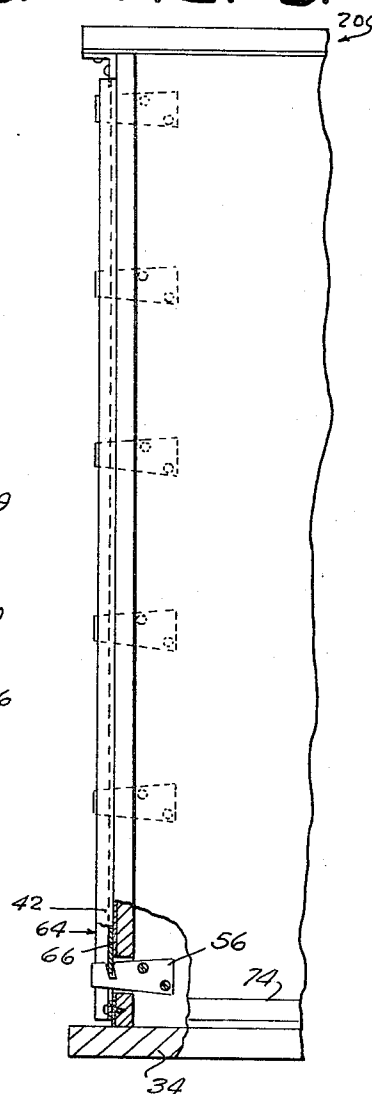


FIG. 10.

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3,380,212

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1 Claim. (Cl. 52-282)

This invention relates to interlocking wall construction especially adapted for use in compartmental building construction and, more specifically, to the construction of elevator cabs.

One of the primary objects of this invention is to provide interlocking means for securing together a plurality of wall sections or panels to form a compartment suitable for use as an elevator cab or for incorporation in a building or other type of edifice.

Another object of this invention is to provide means for rigidly interlocking a plurality of panels or wall sections together to form a suitable room, compartment, elevator cab or other related structure in such a manner that the same may be rapidly assembled or disassembled for repair or replacement of the walls or the panels and without the necessity of resort to special tools.

This invention contemplates, as a still further object thereof, the provision of an elevator cab of the type to which general reference has been made above, the cab being non-complex in construction and assembly, relatively inexpensive to manufacture and maintain, and one which is durable in use.

Other and further objects and advantages of the instant invention will become more manifest from a consideration of the following specification when read in conjunction with the annexed drawings, in which:

FIGURE 1 is a perspective view of an elevator cab constructed in accordance with the teachings of this invention;

FIGURE 2 is an enlarged detail cross-sectional view, FIGURE 2 being taken substantially on the horizontal plane of line 2-2 of FIGURE 1, looking in the direction of the arrows;

FIGURE 3 is an enlarged fragmentary detail cross-sectional view, FIGURE 3 being taken substantially on the vertical plane of line 3-3 of FIGURE 2, looking in the direction of the arrows;

FIGURE 4 is an enlarged fragmentary side elevational view of the proposed door construction, FIGURE 4 being taken substantially on the vertical plane of line 4-4 of FIGURE 3, looking in the direction of the arrows;

FIGURE 5 is an exploded perspective view of the door shown in FIGURE 4;

FIGURE 6 is an enlarged fragmentary detail cross-sectional view, FIGURE 6 being taken substantially on the vertical plane of line 6-6 of FIGURE 1, looking in the direction of the arrows;

FIGURE 7 is an enlarged detail cross-sectional view, FIGURE 7 being taken substantially on the vertical plane of line 7-7 of FIGURE 2, looking in the direction of the arrows;

FIGURE 8 is an enlarged fragmentary detail back elevational view of the cab illustrating the locking means;

FIGURE 9 is a side elevational view, partly in cross-section and illustrating the nature of the locking means; and

FIGURE 10 is an exploded fragmentary perspective view illustrating the nature of the locking means, per se.

Referring now more specifically to the drawings, reference numeral 20 indicates, in general, an elevator cab constructed in accordance with the teachings of this invention. The cab 20 is shown in association with a lifting or hoisting frame 22 which includes a pair of bottom elongated laterally-spaced and substantially parallel channel members 24 to the adjacent pairs of ends of which are connected the lower ends of a pair of vertically-extending

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side frame members 26. The upper ends of the side frame members 26 are fixedly connected to the adjacent ends of a pair of elongated laterally-spaced and substantially parallel top channel members 28. A cable 30 connects the top channel members 28 with a winch or drum, not shown. The frame 22 and all elements relative thereto are old and well-known in the art and form no part of the instant invention.

The cab 20, supported in the frame 22, comprises a substantially rectangular base 32 which is basically supported on the channel members 24. On the base 32 is superimposed a platform or floor 34 formed of any desirable material, preferably of a lightweight laminated type, which may be provided with a finish surface 36. Set into the front marginal edge of the floor 34 is a horizontal substantially rectangular sill 38 formed, preferably, of extruded aluminum and which is provided with an upwardly-opening substantially U-shaped door guide channel 40.

Reference numeral 42 denotes an elongated substantially rectangular back wall held in upright position by means of an angle iron 44 secured to the floor 34 by conventional means. The back wall 42, as well as all other walls or panels to which reference will be made, are formed of a core 46 comprising a compressed moisture-resistant wood particle board, plywood, or other compressed moisture-resistant manufactured core material faced on the cab side with a decorative high pressure plastic laminate 48, and faced on the hatch side with a comparable material to provide a balanced wall section or panel, and the hatch side thereof includes a sheath of galvanized sheet steel 49. To serve a purpose to be described, the vertically-extending marginal edges of the back wall 42 are formed with a plurality of transversely-extending slots 50 (see FIGURE 10).

Reference numeral 52 indicates one sidewall of the cab which is constructed of the same materials as is the back wall 42, the sidewall 52 being essentially rectangular in configuration. As is seen in FIGURES 2 and 10, the outer side of the sidewall 52 adjacent its rear marginal edge is provided with a plurality of vertically-spaced substantially trapezoidal recesses 54 which are adapted to receive therein the substantially trapezoidal fastening plates 56. The fastening plates 56 may be held secured within the recesses 54 by suitable screws passing through the openings 58. As is seen in FIGURES 2, 9 and 10, each of the fastening plates 56 is formed with a tongue 60 which extends beyond the outer edge of the sidewall 42. Each tongue is formed with an upwardly-opening slot 62 to serve a purpose to be described.

The fastening plates 56 are staggered, vertically, on the sidewall 52 in such a manner as to register with the slots 50 formed in the back wall 42 through which the same are inserted. As is seen in the drawing, the tongues 60 are of such length as to project beyond the back wall 42 in order to receive thereon a lock channel bar 64.

The lock channel bar 64 comprises a substantially U-shaped member having a bight 66 through which transversely extends at longitudinally-spaced intervals a plurality of vertically-elongated slots 68 which are so spaced as to receive the tongues 60 therethrough. After the lock channel bar 64 has been mounted on the tongues 60, the bar is forced downwardly in order to cause the bight portion 66 thereof to enter within the slots 62 to firmly connect the back wall 42 with the sidewall 52. Thereafter, and if desired, any conventional fastening means may be passed through openings 69 formed in the bar 64.

As is clearly seen in FIGURES 9 and 10, the slots 62 are inclined inwardly at an angle so that the engagement of the bight portions 66 of the bar 64 therewith will tend to wedge tightly together the adjacent ends of the back wall 42 and the sidewall 52.

Reference numeral **70** designates the other sidewall of the cab which is constructed as has been described above, and this sidewall is connected to the back wall **42** in the manner described above.

After the fastening plates and the lock channel bars have been engaged and the rear edges of each sidewall drawn into engagement with the back wall **42**, the lower marginal edges of each sidewall may be securely fastened to the floor **34** by means of the angle irons **72**, **74**, respectively.

If desired, the sidewall **70** may be provided with a side escape hatch **76**, although this is optional.

Reference numeral **78** designates a stationary front wall formed of the same composition as the back wall **42**, and the front wall **78** is connected to the sidewall **52** through the same fastening means described above, and the lower end of the front wall **78** is anchored to the floor **34** as by the angle iron **80**.

As is seen in FIGURES 1 and 2, the front wall **78** extends substantially one-half the length of the cab **20** and terminates at its inner end in an open side **82** of a vertical channel member **84**.

The outer or front end of the sidewall **70** is embraced within the open side **86** of a channel member **88** having its bight **90** confronting the bight **92** of the channel member **84**. The channel member **88** includes a second open side **93** which normally houses the inner end of a substantially rectangular elevator door **94** adapted for reciprocation between the channel members **84**, **88**.

The front edge of the sidewall **52**, adjacent the upper end thereof, is stepped down as at **96** (see FIGURE 3), to provide a shoulder to support one end of an angle member **98** adapted for use in connection with the door-actuating mechanism which forms no part of the instant invention. The connection of the angle member **98** with the stepped-down portion of shoulder **96** of the sidewall **52** is reinforced by means of the L-shaped bracket **100**. The other end of the member **98** is supported on the upper end of the channel member **88** and is rigidly secured thereto.

The space between the stepped-down portion **96** of the sidewall **52** and the upper end thereof, as well as the similar space which exists between the upper end of the channel member, **88**, and the upper end of the sidewall **70**, is preferably closed by a panel **102** (see FIGURES 1 and 3).

Reference numeral **200** denotes the roof of the cab **20**. The roof **200** is formed of plyboard faced on the cab side thereof with a high pressure laminated decorative plastic **202** and faced on the hatch side with a comparable material to provide a balanced wall section or panel. The hatch side thereof includes a sheath of galvanized sheet steel **204**. The roof **200** is tied to the sidewalls **52**, **70** and to the back wall **42** by means of angle irons **206**, and through the further means of tie rods **208** (see FIGURE 1) which connect the roof **200** to the floor **34**. Mounted on the roof **200** adjacent the front end thereof is an inverted substantially U-shaped channel member **210** which may be utilized in conjunction with the door-operating mechanism, not shown.

Referring now more specifically to FIGURES 3, 4 and 5, the door **94** is seen to comprise a compressed moisture-resistant wood particle board core which may be plywood or other compressed moisture-resistant manufactured core indicated at **300**, the door **94** having an inverted substantially L-shaped recess **302** formed therein on the hatch or outer side thereof. As is seen in FIGURE 5, the recess extends horizontally across the upper end of the door **94** as at **304**, to one vertical edge thereof at which point it is intersected by a vertical groove **306**. The core **300** is reinforced by an inverted substantially L-shaped metallic member **308** which includes the horizontal member **310** adapted for reception within the recess **304** and the vertical member **312** adapted for introduction into the recess **306**. The vertical member **312** and the horizontal member **310** have a pair of adjacent ends fixedly secured together as by

welding **313** and this assembly is capped by a top head strip member **314** projecting laterally from the horizontal member **310** to be fitted and secured to the upper end of the core **300** by conventional means. The top head strip member **314** and the horizontal member **310** are fixedly secured together as by welding to form an integral section. Screws **316** may be utilized, if desired, to connect the top head strip member **314** to the core.

Additionally, the entire unit or metallic member **308** may be secured in position on the door by means of a plurality of countersunk bolts **317** which are inserted from the base or cab side of the door and which engage in suitable threaded openings formed in the member **308**. The lower end of the door **300** is encased within a substantially U-shaped housing **318** from the bight portion **319** of which depends a guide pin **320** adapted to be received within the groove or channel **40**.

Suitable fluorescent or other type of lighting means **400** may be subtended from the roof **200** as by means of the spacer bolts **402**.

Having described and illustrated one embodiment of this invention in detail, it will be understood that the same is offered by way of example only, and that this invention is to be limited only by the scope of the appended claim.

What is claimed is:

1. Means for securing a pair of walls in abutting relationship, with one wall normal to the other, one of said walls having formed in one of its faces and adjacent an edge, a series of trapezoidal depressions each receiving a flat trapezoidal member secured therein and having an end projecting beyond said edge; the other of said walls having formed therein adjacent an edge thereof a series of openings spaced to receive said ends with said ends projecting beyond said other of said walls, the projecting portion of said ends each having a notch in its upper edge, said notches being inclined toward the wall through which said ends project; a releasable elongated securing member having a web and a plurality of spaced slots therein, the spacing between said slots corresponding to the spacing between said flat trapezoidal members, each slot receiving a projecting end of a trapezoidal member with an edge of said web bounding each slot seated within said notches, the inclination of said notches causing the two walls to be tightly drawn together, means releasably securing said elongated member to said outer wall.

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