United States Patent

Loomis

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[45] Aug. 29, 1972

[54] DOOR FRAME, SILL AND FACIA CONSTRUCTION FOR ELEVATOR

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[52] **U.S. Cl.** **52/211**, 52/30, 52/217

[51] **Int. Cl.**.....**B66b 13/30**, E06b 1/04

[58] **Field of Search**.....52/217, 213, 211, 204, 29, 52/30, 235

[56] **References Cited**

UNITED STATES PATENTS

3,382,631	5/1968	Halpern	52/30 X
3,407,553	10/1968	Halpern	52/217
3,431,690	3/1969	Halpern	52/204
3,535,837	10/1970	Atkinson et al	52/217 X
3,601,938	8/1971	Loomis	52/29

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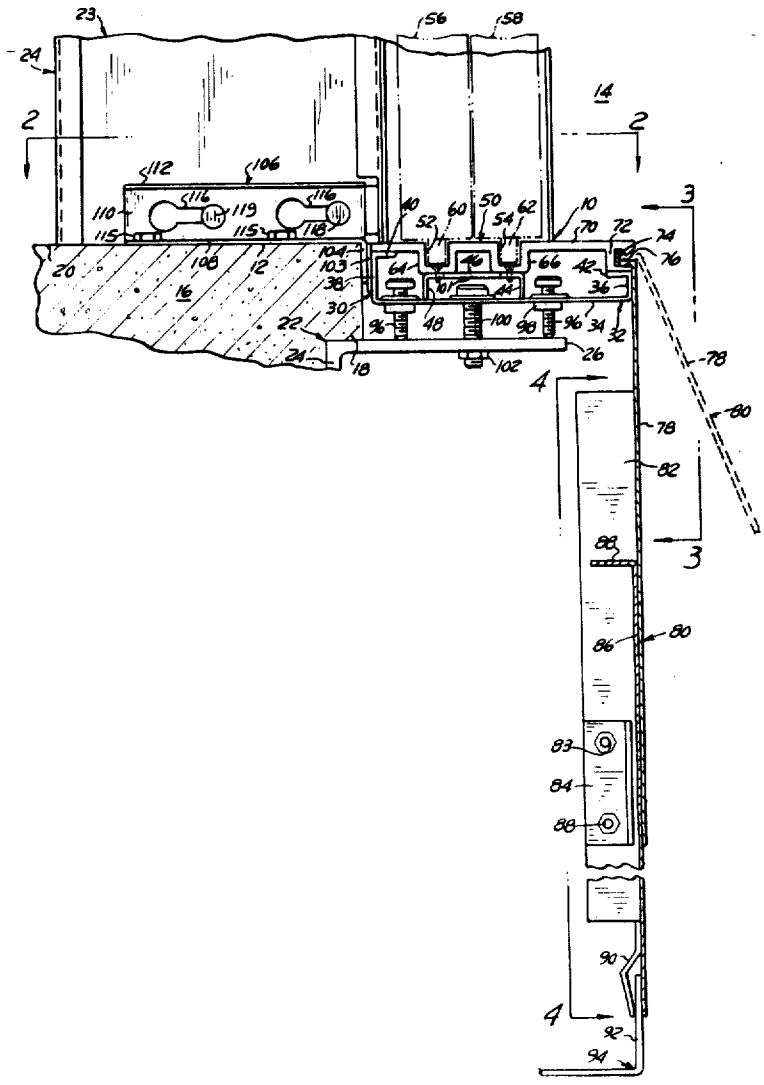
[57] **ABSTRACT**

Mounted for vertical adjustment upon an angle member previously installed in an elevator shaft below an entrance opening thereof is an upward-facing flanged channel sill support upon which rests an entrance door sill. Secured at right angles to the sill support in spaced parallel relationship and projecting outward therefrom into the entrance opening are two angle brackets, each with a plurality of horizontally spaced keyhole slots in its vertical flange. Detachably secured to each such vertical flange by headed screws seated in the keyhole slots is the lower end of a channel door jamb of an elevator entrance door frame. Tiltably insertably into a groove of L-shaped cross-section in the inner edge of the sill is the L-shaped upper end flange on an upper facia panel. Slidably mounted on the upper facia panel for vertical adjustment relatively thereto is a lower facia panel, the lower edge of which rests upon the upper edge of the unfolded Z-shaped hanger head of the elevator entrance structure of the floor immediately below.

11 Claims, 4 Drawing Figures



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SHEET 1 OF 2

FIG. 1

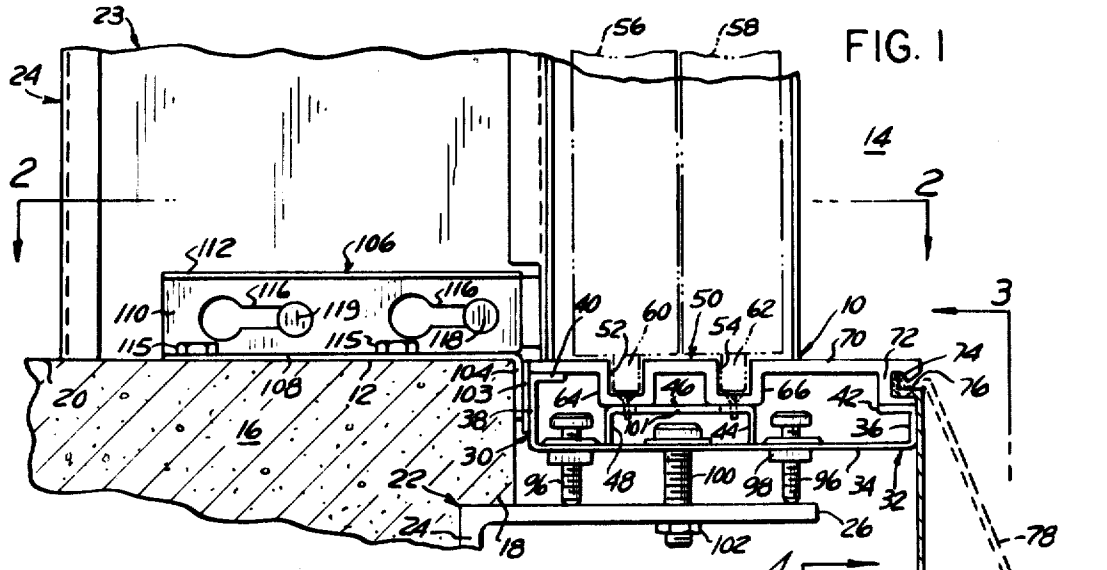

FIG. 4

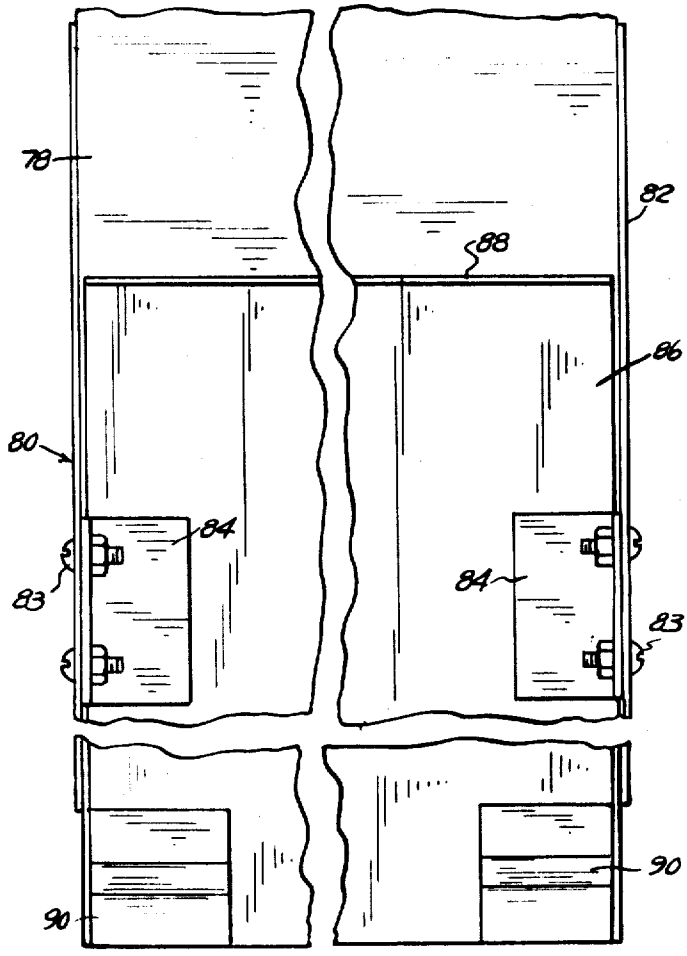

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FIG. 2

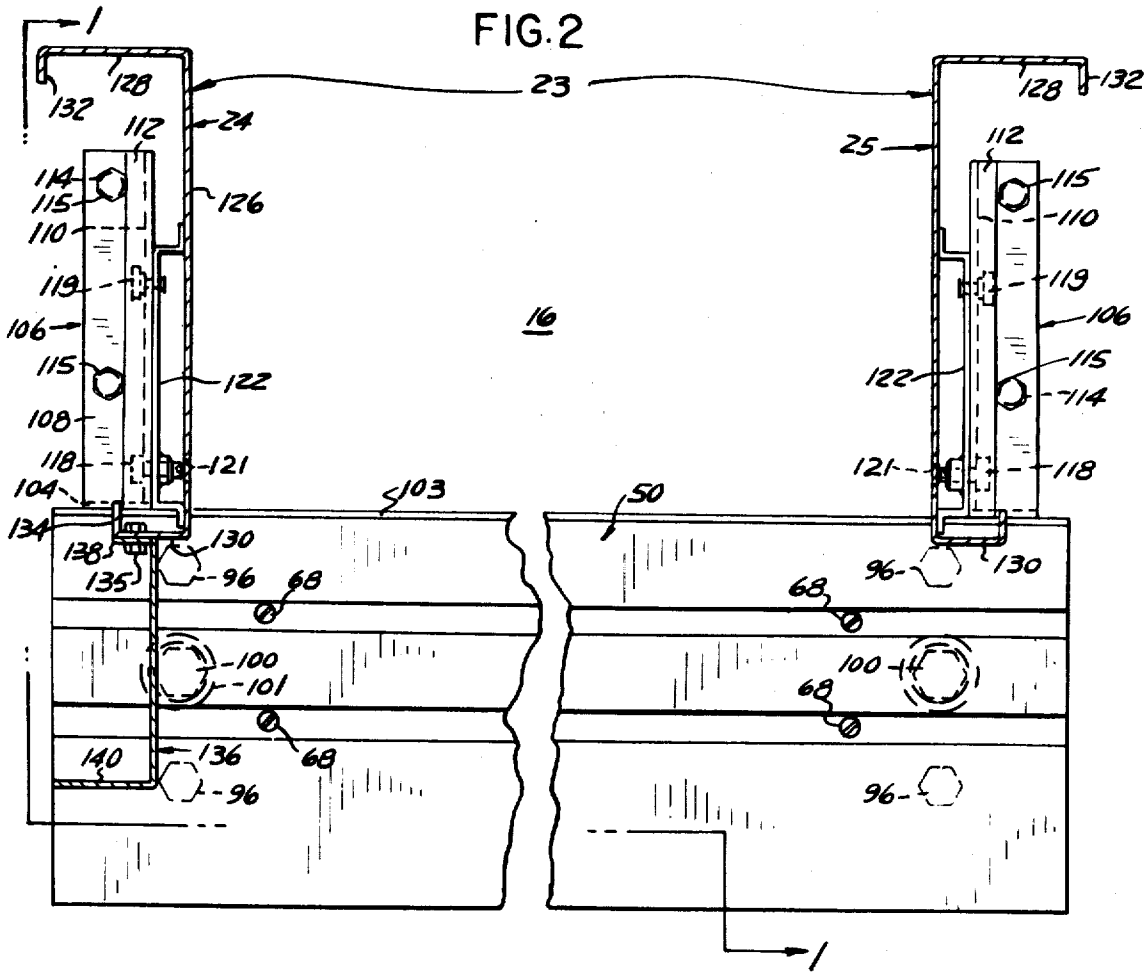
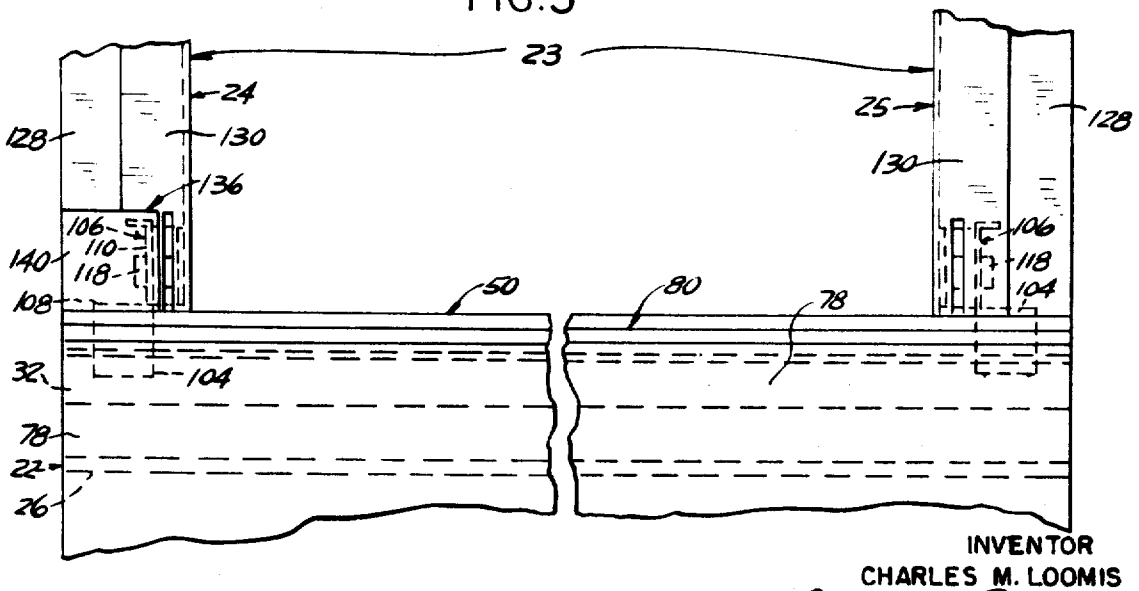


FIG. 3



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DOOR FRAME, SILL AND FACIA CONSTRUCTION FOR ELEVATOR

BACKGROUND OF INVENTION

Hitherto elevator shaft entrance structures have been constructed and installed individually to fit each shaft entrance opening. In so doing, the entrance door frame head has first been set up in the opening and bolted into place, after which two vertical door jambs have been brought into the opening and bolted in position. Enough clearance has had to be left adjacent these parts for the installing mechanic to use his wrenches to tighten the bolts. In short, the entrance frame is set up piece by piece and "tailored" to fit the particular size of elevator shaft wall opening.

SUMMARY OF INVENTION

In contrast to this prior practice the present invention provides a completely assembled door frame which is slid as a finished unit into the rough elevator shaft opening from the corridor and bolted into place in the opening and adapts itself to the opening. Damaged or worn entrance frames and sills are easily replaced at a later date by loosening their bolts and sliding them outward into their respective corridors. The entrance door jambs, sill and facia panel of each elevator shaft entrance structure rest upon or are connected to a supporting structure which in turn rests upon and is supported by a horizontal angle member or shelf installed in the elevator shaft wall immediately below the floor level of the entrance opening.

In the drawings,

FIG. 1 is a vertical section, partly in side elevation, of an elevator shaft entrance structure, taken along the line 1—1 in FIG. 2 and showing a portion of the building structure upon which it is mounted;

FIG. 2 is a horizontal section taken along the line 2—2 in FIG. 1, with the building structure omitted to simplify the disclosure;

FIG. 3 is a fragmentary front elevation of the adjustable facia unit looking in the direction of the arrows 3—3 in FIG. 1 with the building structure likewise omitted; and

FIG. 4 is a fragmentary rear elevation of the adjustable facia unit looking in the direction of the arrows 4—4 in FIG. 1.

Referring to the drawings in detail, FIG. 1 shows a door frame, sill, and facia construction, generally designated **10**, for the entrance opening **12** of an elevator shaft **14** having a front wall **16** containing the opening **12**. A portion **18** projects into the elevator shaft **14** and terminates approximately 2 inches below the level of the rough concrete floor **20** which extends up to the entrance opening **12**. Spaced slightly below the portion **18**, a horizontal shelf or ledge **22** projects into the shaft **14** and may consist of an angle member **22** mounted in the front wall **16** with its vertical flange **24** secured thereagainst and with its horizontal flange **26** projecting inward into the elevator shaft **14**. Mounted within the entrance opening **12** is a door frame **23** including horizontally spaced parallel vertical door jambs **24** and **25**.

Resting in part upon the rough floor **20** and in part upon the horizontal flange **26** of the angle member or horizontal shelf **22** is a sill and jamb supporting structure **30** (FIG. 1). The sill and jamb supporting structure

30 includes an elongated upwardly facing horizontal channel member or sill support **32** having a web **34**, vertical side flanges **36** and **38** and top flanges **40** and **42** disposed at different horizontal levels because of the greater height of the outer vertical flange **38** as compared with the inner vertical flange **36**. Welded or otherwise suitably secured to the web **34** in spaced parallel relationship to the vertical flanges **36** and **38** is a downwardly facing channel member **44** having a web **46** and downwardly extending vertical flanges **48**. Resting upon the web **46** and the horizontal flanges **40** and **42** is an entrance sill **50** provided with a single guide channel **52** or an additional parallel guide channel **54** depending upon whether the elevator entrance opening **12** is provided with a single entrance door **56** or double entrance doors **56** and **58**. Each door **56** and **58** is conventional and its details form no part of the present invention, each being slidably supported from an overhead hanger structure (not shown) and having guide pins or gibs **60** and **62** extending downward from its lower end into the guide channel **52** or **54**, as the case may be. The guide pins or gibs **60** and **62** are conveniently made from long-wearing nylon plastic. The channels **52** and **54** constitute grooves formed in downwardly extending channel portions **64** and **66**, the webs of which are secured by fasteners **68** (FIG. 2) to the web **46** of the channel member **44**. The top portion **70** of the entrance sill **50** at its forward edge rests upon the horizontal flange **40** of the channel member **32** (FIG. 1) and at its rearward edge is provided with a downwardly extending rib **72** resting upon the horizontal flange **42** and containing a horizontal groove **74** of L-shaped cross-section. Hooked by tilting it into the L-shaped groove **74** in interlocking relationship therewith is the correspondingly L-shaped flange **76** extending along the upper edge of the upper panel **78** of an adjustable facia unit **80**.

The upper facia panel **78** has parallel guide flanges **82** projecting outward from its opposite edges terminating a short distance below the L-shaped transverse flange **76**. Bolted at **83** to the guide flanges **82** at their lower ends are angle members **84** spaced a short distance away from the upper facia panel **78** so as to provide clearance for a lower facia panel **86**. At its upper end, the lower facia panel **86** is provided with a transversely extending perpendicular stop flange **88** which at the maximum extension of the facia unit **80** engages the upper ends of the angle members **84**. Spot-welded or otherwise suitably secured to the lower facia panel **86** near its lower end are two retaining clips **90** which are adapted, in cooperation with the lower end portion of the lower facia panel **86**, to engage the vertical portion **92** of a Z-shaped hanger header **94** (FIG. 1) from which the elevator shaft entrance structure (not shown) of the entrance opening on the floor below is suspended. The hanger **94** itself is beyond the scope of the present invention and is disclosed and claimed in my co-pending application, Ser. No. 3335, filed Jan. 16, 1970 for Universal Elevator Shaft Entrance Construction, now U.S. Pat. No. 3,601,938, issued Aug. 31, 1971.

The sill and jamb supporting structure **30** is adjustably mounted upon the horizontal flange **26** of the angle member **22** (FIG. 1) by a pair of adjusting cap screws **96** mounted at each of the opposite ends of the

upwardly facing horizontal channel member **32** and threaded through nuts **98** fixedly secured in spaced parallel relationship in the web **34**. The channel member **32** midway between the cap screws **96** of each pair is drilled for the passage of a bolt **100**, the lower end of which passes through the alignedly-drilled horizontal flange **26** of the angle member **22** and is secured in position by a nut **102** threaded on the lower end of each bolt **100**. Consequently, by loosening the nut **102** and rotating the cap screws **96** by means of a suitable wrench (not shown), the channel member **32** and consequently the entire sill and jamb supporting structure **30** can be raised or lowered as desired.

Welded to the vertical flange **38** of the channel member **32** is an elongated strip **103**, preferably of stainless steel, near each of the opposite ends of which is similarly secured the downwardly bent attachment portion or tab **104** of a jamb-connection bracket **106**. The bracket **106** is of generally channel-shaped configuration with the attachment portion **104** integral with and at right angles to the horizontal flange **108**, from which the vertical web **110** projects upward to a shorter horizontal flange **112** at the top thereof (FIGS. **1** and **2**). The horizontal flange **108** is drilled with spaced holes **114** (FIG. **2**) to receive holddown bolts **115** extending into the floor **20**. The vertical web **110** of each jamb-connection bracket **106** is provided with a pair of horizontally spaced aligned keyhole slots **116** (FIG. **1**) adapted to receive the heads and shanks of screws **118** threaded into nuts **120** and shouldered headed studs **119** (FIG. **2**) which are respectively welded and riveted to bridge members **122** welded or otherwise secured to the inner surfaces of the door jambs **24** and **25**. The screws **118** have slots or hexagonal sockets in the ends of their shanks for a screw driver or wrench inserted through access holes **121** in the members **122**. The door jambs **24** and **25** are in the form of flanged channel members having webs **126** form which perpendicular flanges **128** and **130** of different widths project outward and terminate in perpendicular edge flanges **132** and **134**.

Secured as by bolts **135** to the narrower flange **130** (FIG. **2**) of the so-called strike jamb **24** opposite the so-called return jamb **25** is a door stop **136** also in the form of a channel member with its narrower flange **138** secured to the flange **130** and its wider flange **140** spaced inward therefrom.

The installation of the elevator shaft entrance construction shown in the drawings has been indicated above during the foregoing description of the construction thereof. The floor **16** is drilled with holes precisely located to receive the holddown bolts (FIG. **2**) such as expansion bolts inserted through the holes **114** in the brackets **106**. By tightening these bolts, the brackets **106** are bolted down to the floor **16**. The bolts **100** (FIG. **1**) are then inserted through access openings **101** into suitably drilled aligned holes in the web **34** of the channel member **32** and the nuts **102** threaded onto the lower ends thereof. The adjusting screws **96** are then rotated so as to suitably support the channel member **32** upon the horizontal flange **26** of the angle member **22**. The sill **50** is then placed in position upon the top flanges **40** and **42** of the channel member **32**, and after drilling suitable holes in the bottoms of the channel portions **64** and **66** and drilling and threading aligned holes in the web **46**, the screws **68** are then inserted and screwed down into place so as to secure the sill **50** to the channel member **32**.

The L-shaped upper edge flange **76** of the upper facia panel **78** is then inserted in the L-shaped groove **74** while the panel **78** is in the tilted position shown in dotted lines in FIG. **1**. The upper panel **78** and its slidably connected lower panel **86** of the facia panel unit **80** are then swung downward into the vertical solid line positions of FIG. **1** while the lower facia panel **86** is lifted a sufficient distance for the lower edges of the clips **90** to clear the upper edge of the upper flange **92** of the hanger header **94**, whereupon the lower facia panel **86** is permitted to drop so that it falls on one side of the hanger header flange **92** while its clips **90** fall on the other side thereof.

Meanwhile, the operator has completed the assembly of the entrance doorway frame **23**, of which only the strike jamb **24** and return jamb **25** are shown in the drawings. The lintel, header and other structure at the upper end of the door frame are omitted as beyond the scope of the present invention, but are disclosed and claimed in my co-pending application, Ser. No. 3335 filed Jan. 16, 1970 for Universal Elevator Shaft Entrance Construction, now U.S. Pat. No. 3,601,938, issued Aug. 31, 1971. The operator now slides the door frame **23** into the entrance opening **12** by sliding the jambs **24** and **25** therein, after having loosened the screws **118** at the lower ends thereof. When the heads of the screws **118** arrive opposite the enlarged portions of the keyhole slots **116**, the operator pushes the lower ends of the jambs **24** and **25** away from one another against the vertical flanges **110**, causing the heads and adjacent shank portions of the screws **118** to pass through the enlarged portions of the keyhole slots **116**. The operator then continues to slide the jambs **24** and **25** inward toward the entrance sill **50** until the shanks of the screws **118** arrive adjacent the ends of the narrower portions of the keyhole slots **116** (FIG. **1**). The operator then tightens the screws **118** by means of a screw driver, thereby clamping and locking the jambs **24** and **25** firmly in position in the entrance doorway opening **12**. The remainder of the assembly follows the procedure set forth in my above-mentioned co-pending patent.

Damaged or worn jambs, as well as worn sills, can be replaced by reversing the above-described procedure in order to remove such worn or damaged members. Their replacements are then inserted by following the above-described procedure. In the same manner, jambs or complete door frames of more expensive metals such as bronze or stainless steel can also be quickly and easily substituted for previously installed jambs or frames of less expensive materials.

I claim:

1. A door frame, sill and facia construction adapted to be secured to a building floor adjacent an elevator shaft entrance opening having a ledge disposed therebelow, said construction comprising

a sill and jamb supporting structure including an elongated horizontal sill support overhanging the elevator shaft adjacent said opening,

means on said sill support extending downward to the ledge,

an elongated entrance door sill mounted on said sill support and secured thereto,

a pair of bracket members secured to said sill support in spaced relationship to one another and extending therefrom into the entrance opening and adapted to be secured to the floor at locations spaced away from the shaft,

a pair of vertical door frame jambs disposed in spaced parallel relationship and at their lower ends engaging said bracket members,

and means for securing said lower ends of said jambs to said brackets.

2. A door frame, sill and facia construction, according to claim 1, wherein facia means is secured to and depends from the inner edge of said sill into the shaft.

3. A door frame, sill and facia construction, according to claim 2, wherein said facia means includes a plurality of facia panel members secured to one another in vertically-sliding relationship therebetween.

4. A door frame, sill and facia construction, according to claim 2, wherein said inner edge of said sill has recess means therein, and wherein said facia means has facia attachment means projecting therefrom into said recess means.

5. A door frame, sill and facia construction, according to claim 4, wherein said recess means comprises a groove of approximately L-shaped cross-section, and wherein said facia attachment means comprises a flange of approximately L-shaped cross-section tiltably insertable in said L-Shaped cross-section groove in interlocking relationship therewith.

6. A door frame, sill and facia construction, according to claim 1, wherein said downward-extending means includes adjusting screws threaded downward through said sill support into engagement with the ledge.

7. A door frame, sill and facia construction, according to claim 6, wherein said downward-extending means also includes fasteners extending between and secured to said sill support and the ledge.

8. A door frame, sill and facia construction, according to claim 1, wherein said sill support comprises a channel member having a web with flanges extending upward therefrom at the opposite edges thereof, and wherein said sill rests on said flanges.

9. A door frame, sill and facia construction, according to claim 1, wherein fasteners extend between said bracket members and the lower end portions of said jamb members in interlocking relationship therewith.

10. A door frame, sill and facia construction, according to claim 9, wherein said fasteners are headed fasteners projecting from the lower end portions of said jamb members toward said bracket members, and wherein said bracket members have slots therein slidably receiving said fasteners.

11. A door frame, sill and facia construction, according to claim 10, wherein said slots comprise keyhole slots with enlarged portions receiving the heads of said fasteners and with narrower portions slidably receiving only the shanks of said fasteners.

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