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
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. 3,335, 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 jamsbs 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 jamsbs 24 and 25 are in the form of flanged channel members having webs 126 from 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 jamsbs 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 jamsbs 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 jamsbs 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 jamsbs 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 jamsbs, 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, jamsbs or complete door frames of more expensive metals such as bronze or stainless steel can also be quickly and easily substituted for previously installed jamsbs 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,
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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 facia means 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 9, wherein said facia means includes a plurality of facia panel members secured to one another in vertically-sliding relationship therewith.

10. A door frame, sill and facia construction, according to claim 9, wherein said facia means includes a plurality of facia panel members secured to one another in vertically-sliding relationship therewith.

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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