Sept. 24, 1963 E. V. EICHMAN 3,104,865

RAILING CONSTRUCTION

Filed May 14, 1962 2 Sheets-Sheet 1

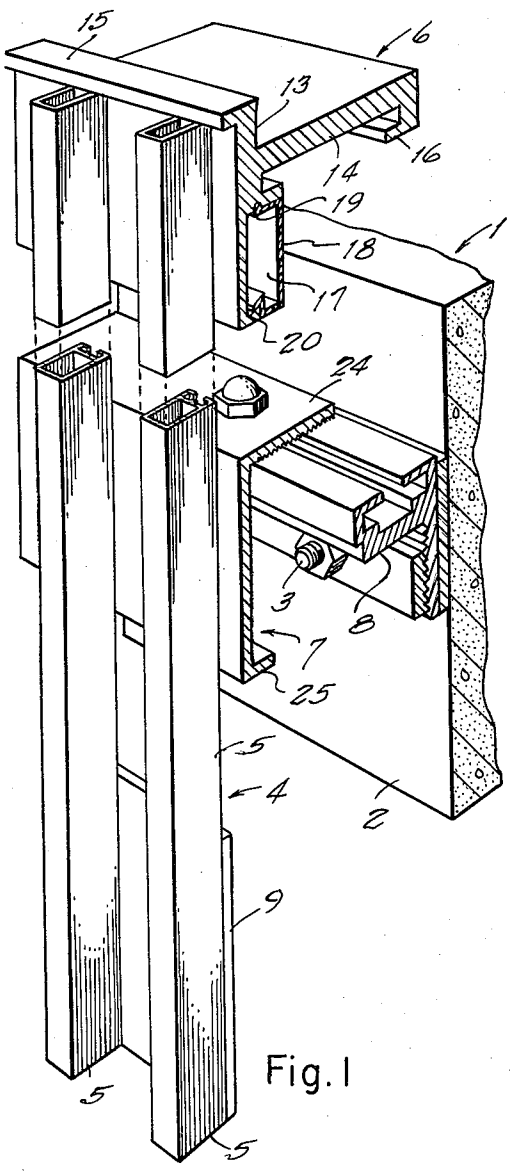


Fig. 1

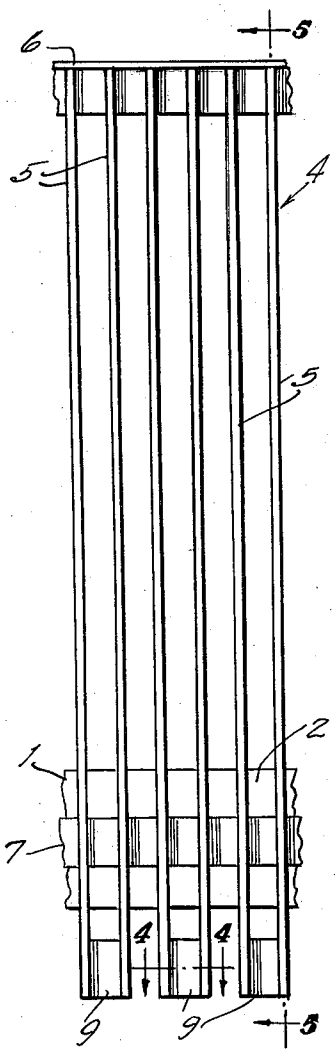


Fig. 2

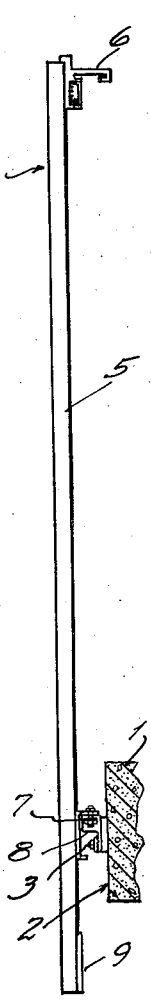


Fig. 3

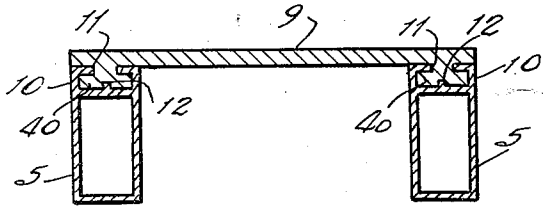


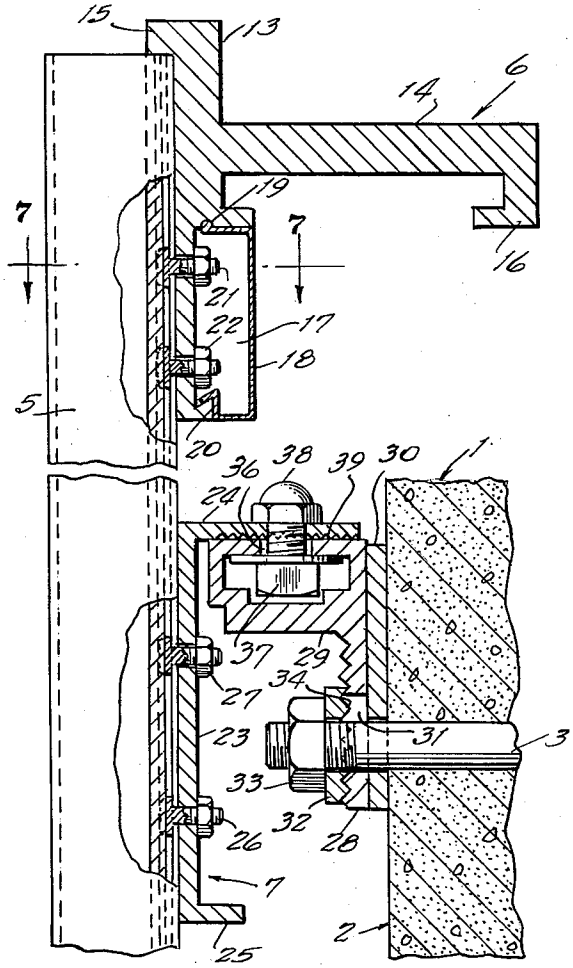
Fig. 4

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RAILING CONSTRUCTION

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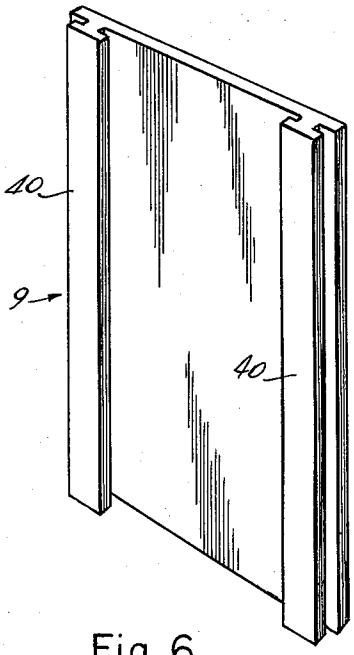


Fig. 6

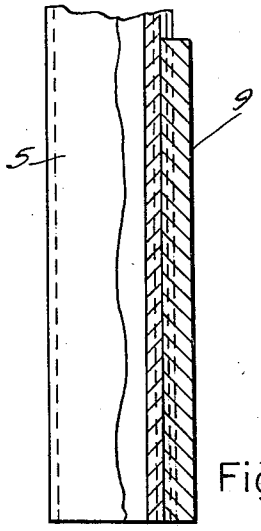


Fig. 5

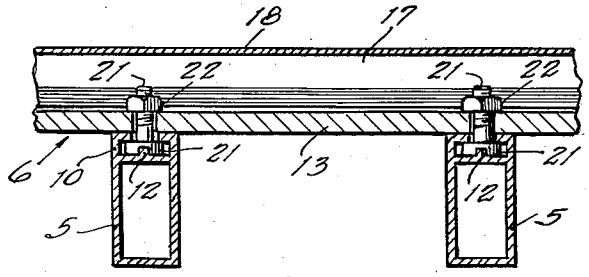


Fig. 7

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RAILING CONSTRUCTION

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7 Claims. (Cl. 256—21)

This invention relates to a railing construction, and it concerns more particularly an ornamental railing for use in conjunction with building structures.

The invention contemplates an ornamental railing which is particularly adapted for use in the construction of elevated, exposed structures, such as balconies, terraces, walks, breezeways, and the like, having an elevated floor and open on at least one side, in connection with which ornamental railings advantageously may be used.

The ornamental railing of the invention is also applicable to any wall surface or projecting ledge, as well as to window and door openings, and roof structures, whereby it may simulate balconies, porches, and observation decks or platforms, for decorative purposes only.

An object of the invention is to provide an ornamental railing as described which is of attractive appearance and which may be assembled from a selection of prefabricated structural units of novel design, each of which advantageously may be formed of extrusion molded light weight metal such as aluminum.

The invention will be readily understood by referring to the following description and the accompanying drawing, in which:

FIGURE 1 is a perspective view, partly broken away, showing fragmentarily an ornamental railing embodying the invention, as applied to a building structure, as seen from the top, front, and one side thereof;

FIGURE 2 is a front elevational view on a reduced scale showing fragmentarily an ornamental railing and its supporting structure as illustrated in FIGURE 1;

FIGURE 3 is an elevational view taken at right angles to the view shown in FIGURE 2;

FIGURE 4 is a sectional plan view on an enlarged scale taken on the line 4—4 of FIGURE 2;

FIGURE 5 is a sectional elevational view on an enlarged scale, partly broken away, taken on the line 5—5 of FIGURE 2;

FIGURE 6 is a perspective view on an enlarged scale showing one of the parts, in its detached position, as seen from the top, front, and one side thereof; and

FIGURE 7 is a sectional plan view taken on the line 7—7 of FIGURE 5.

Referring to FIGURES 1 to 3 of the drawing, the numeral 1 designates generally an elevated, exposed building structure, shown fragmentarily, which advantageously may be a concrete floor, for example, and which has a vertical face 2, corresponding to one edge of the floor, having a height corresponding to the thickness of the floor.

The floor 1 has a plurality of studs 3, one of which is shown in each of FIGURES 1 and 5, set in the concrete thereof and extending horizontally outwardly from its exposed edge 2, in parallel, spaced apart relation to each other, whereby the ornamental railing of the invention is supported on the exposed edge 2 of the floor 1, as hereinafter described.

The ornamental railing of the invention, indicated generally by the numeral 4, includes a plurality of vertically disposed pickets 5, which are connected in parallel, spaced apart relation to each other by top and bottom rails, indicated generally by the numerals 6 and 7, respectively.

The top rail 6 is connected to the upper ends of the pickets 5, and the bottom rail 7 is connected to the pickets 5 above their lower ends. The bottom rail 7 is supported on brackets, indicated generally by the numeral 8, one

of which is shown, which are attached to the studs 3, and the pickets 5 are further connected to each other in pairs adjacent their lower ends, which extend below the floor 1, as shown in FIGURE 2, by a plurality of spacer plates, indicated generally by the numerals 9.

As shown in FIGURES 1, 4, and 7, the pickets 5, which advantageously may be formed of extrusion molded aluminum, are hollow, and are generally rectangular in transverse section, and have channel shaped marginal extensions 10 along one of their longitudinal edges formed by extending the two opposite side portions of the respective pickets 5 beyond the connecting edge portion. The two opposite sides of the channel shaped extension 10 have opposingly flanged outer edge portions defining between them a longitudinal slot 11. An integral rib 12, which is of minute dimensions, extends longitudinally of the edge portion of the picket 5 forming the bottom of the channel shaped extension 10, in alignment with the longitudinal slot 11.

The top rail 6, which advantageously may be formed of extrusion molded aluminum, is angular in transverse section, as shown in FIGURES 1 and 5, and has a vertically extending portion 13 extending across the upper ends of the pickets 5 and a horizontally extending portion 14 which is joined to the vertically extending portion 13 intermediate its upper and lower edges.

The upper edge of the vertically extending portion 13 of the top rail 6 is flanged, as it 15, whereby it overlies the upper ends of the pickets 5, and the outer edge of the horizontally extending portion 14 has a downwardly and inwardly turned flange 16 thereon.

The vertically extending portion 13 of the top rail 6 is of thin walled construction adjacent its lower edge, and forms the bottom and two sides of a longitudinally extending box 17, which is coextensive therewith.

The longitudinally extending box 17 has a thin walled cover 18, which advantageously may be formed of extrusion molded aluminum and is channel shaped in transverse section. The cover 18 is removably hinged to one side of the box 17, as at 19, and has detent means therefor on the opposite side of the box 17, as at 20, whereby it may be snapped shut.

As shown in FIGURES 5 and 7, each of the pickets 5 is connected to the top rail 6 by screws 21, which have their heads confined within the channel shaped extension 10 of the picket 5, with their slots in engagement with the longitudinal rib 12 thereof, and are passed through the longitudinal channel 11 of the picket 5 and through openings therefor in the vertically extending portion 13 of the top rail 6. The screws 21 have nuts 22 applied thereto, the nuts 22 being enclosed within the box 17.

As shown in FIGURES 1 and 5, the bottom rail 7 has a vertically extending portion 23, and has flanged upper and lower edges 24 and 25, the flanged upper edges 24 being relatively wider.

Each of the pickets 5 is secured to the vertically extending portion 23 of the bottom rail 7 by screws 26, which have their heads confined in the channel shaped extension 10 of the picket 5, with their slots in engagement with the longitudinal rib 12, and are passed through the longitudinal slot 11, and openings therefor in the vertically extending portion 23 of the bottom rail 7, and have nuts 27 applied thereto.

The brackets 8, to which the flanged upper edges 24 of the bottom rail 7 are connected as hereinafter described, each have a vertically extending portion 28 and a horizontally extending portion 29. The vertically extending portion 28 bears against a spacer element 30, which in turn is disposed between the bracket 8 and the edge 2 of the floor 1. The studs 3 are each passed through an opening therefor in the spacer element 30,

and through a vertical slot 31 in the vertically extending portion 28 of the bracket 8, whereby the bracket 8 is connected to the studs 3 for vertical adjustment relative thereto. A member 32, which is received on the stud 3 between the vertically extending portion 28 of the bracket 8 and a nut 33 applied to the outer end of the stud, has serrations 34 thereon which coact with serrations 35 on the bracket 8 whereby the bracket 8 is secured in its adjusted position relative to the stud 3.

The horizontally extending portions 29 of the respective brackets 8, on which the flanged upper edge 24 of the bottom rail 7 is supported, each have a channel shaped structure, the opposite sides of which are flanged inwardly and define between them a slot 36, coextensive therewith, which extends parallel to the flanged upper edge 24 of the bottom rail 7.

The flanged upper edge 24 of the bottom rail 7 is secured to the respective brackets 8 by bolts 37, each of which has its head confined in the channel shaped portion 29 and extends through the slot 36, and through an opening therefor in the flanged upper edge 24 and has a nut 38 applied thereto.

The flanged upper edge 24 of the bottom rail 7 has serrations 39 on its under side in opposing relation to the top sides of the horizontally extending portions 29 of the respective brackets 8, whereby the bottom rail 7 is secured in its adjusted positions relative to the brackets 8.

As shown in FIGURES 4 and 6, the spacer plates 9, each of which connects the lower ends of a pair of the pickets 5, each have a pair of vertically extending ribs 40 on one side thereof, coextensive therewith. The ribs 40 are shaped to conform to the channel shaped extensions 10 of the respective pickets 5, in which they are confined, intermediate portions of the ribs 40 engaging the longitudinal channels 11 and slots therein engaging the longitudinal ribs 12.

The invention may be modified in various ways without departing from the spirit and scope thereof.

What is claimed is:

1. In combination with a building structure comprising an elevated concrete floor having an exposed edge portion lying in a vertical plane, the combination of a plurality of studs set in the concrete floor and extending horizontally outwardly from said edge portion in parallel, spaced apart relation to each other, a plurality of brackets each secured to said edge portion by one of the studs, and an ornamental railing consisting essentially of a plurality of vertically disposed pickets, formed of extrusion molded light weight metal, connected in parallel, spaced apart relation to each other adjacent their upper ends and above their lower ends by a top rail and a bottom rail, respectively, each formed of extrusion molded light weight metal, extending across one side of the respective pickets and removably connected thereto, the bottom rail being removably connected to each of the brackets and the lower ends of the pickets extending below the concrete floor and being connected in pairs by a plurality of spacer plates, each of which extends across said one side of the respective pickets and is removably connected thereto.

2. The structure of claim 1, the pickets each having a longitudinal channel, coextensive with its length, in said one side thereof, the opposite sides of the channels having inwardly flanged marginal portions defining between them a longitudinal slot of lesser width than the channel, and a longitudinal rib of minute dimensions being formed on the bottom of each of the channels, in alignment with the longitudinal slot, and the top and bottom rails being removably connected to the respective pickets by machine screws each having its head confined in one of the longitudinal channels, with its slot in engagement with the longitudinal rib thereof, and extending through the longitudinal slot and through an opening therefor in a top or bottom rail.

3. The structure of claim 2, the spacer plates each having a pair of vertically extending ribs on one side thereof, coextensive therewith, adjacent its longitudinal edges, said ribs being conformable to the longitudinal channels of the respective pickets to which the spacer plate is connected, and being received therein, the ribs having reduced intermediate portions each extending through one of the longitudinal slots and being further secured in engagement with said channels by crimping.

4. The structure of claim 2, the top rail being angular in transverse section and having a vertically extending portion extending across said one side of the respective pickets and having a flanged upper edge overlying the upper ends of the pickets, and having a horizontally extending portion connected to the vertically extending portion between its upper and lower edges, said rail being of thin walled construction adjacent its lower edge and defining the bottom and two sides of a longitudinal box, coextensive therewith, having openings therein for the screws whereby the rail is connected to the respective pickets, the longitudinal box having a separable cover therefor consisting of a channel shaped elongated member removably hinged to one side of the box and having detent means therefor on the opposite side of the box whereby it is adapted to be snapped shut.

5. The structure of claim 2, the bottom rail having a flanged upper edge whereby it is supported on the respective brackets, and the brackets each having an upwardly facing channel, coextensive therewith, extending parallel to the flanged upper edge of the bottom rail, the opposite sides of the last mentioned channel having inwardly flanged marginal portions defining between them a longitudinal slot of lesser width than the channel, and the flanged upper edge of the bottom rail being removably connected to the respective brackets by bolts each having its head confined in one of the channels and extending through the corresponding slot and through an opening therefor in the flanged upper edge of the bottom rail.

6. The structure of claim 5, the brackets being angular in transverse section and having a vertically extending portion overlying said edge portion of the floor and a horizontally extending portion whereby it is connected to the flanged upper edge of the bottom rail, the vertically extending portion having a vertical slot therein for engagement by the corresponding stud for vertical adjustment relative thereto, and a member received on the stud having a serrated face in opposing relation to said vertically extending portion whereby the bottom rail is secured in its adjusted position relative to the stud.

7. The structure of claim 6, the flanged upper edge of the bottom rail having a serrated under side in opposing relation to the top side of said horizontally extending portion whereby the bottom rail is secured in its adjusted position relative to the bracket.

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