

Feb. 8, 1966

L. BLUM

3,233,377

ORNAMENTAL RAILING MOUNTINGS

Filed May 9, 1963

4 Sheets-Sheet 1

FIG. 1 -

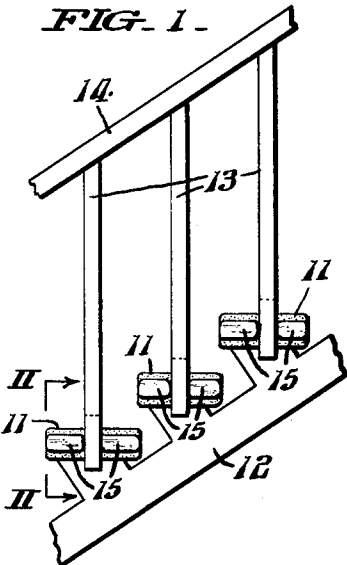


FIG. 2 -

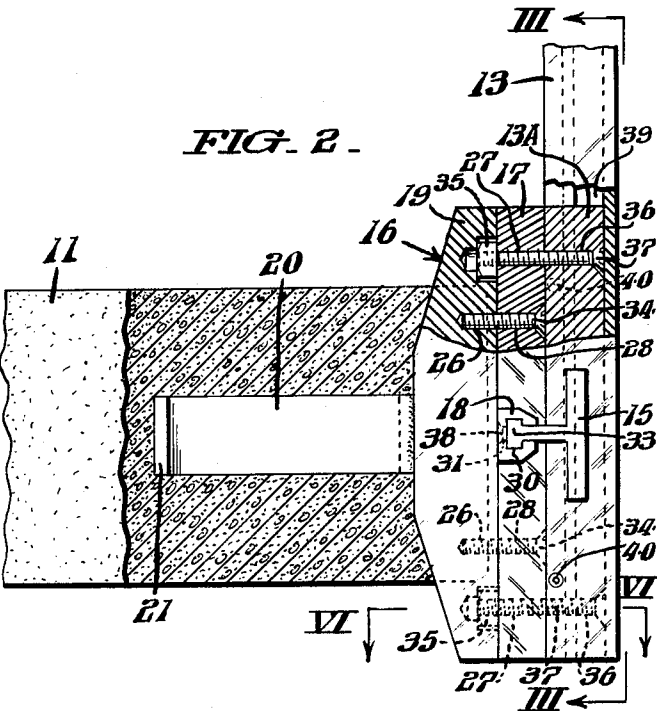


FIG. 3 -

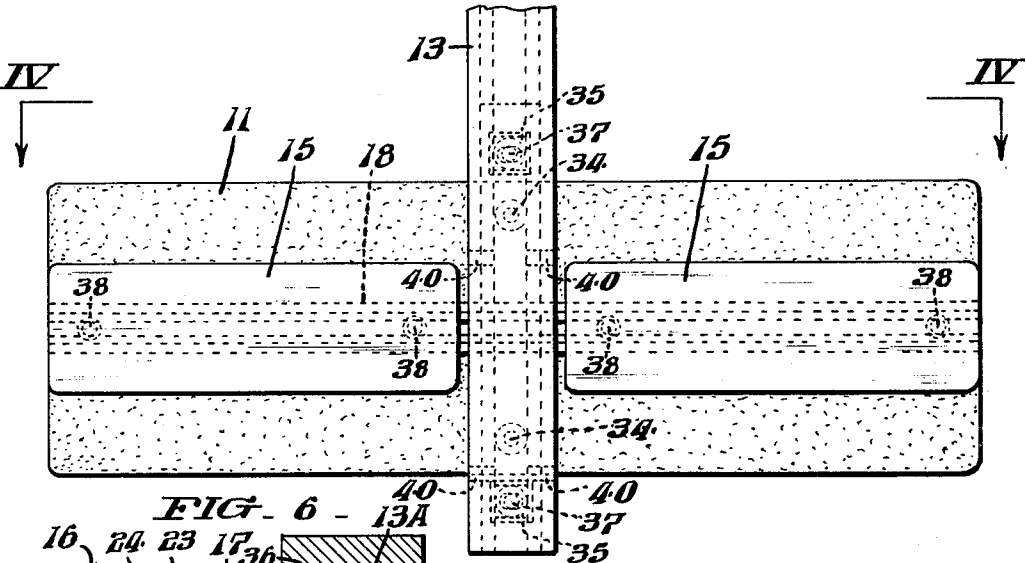
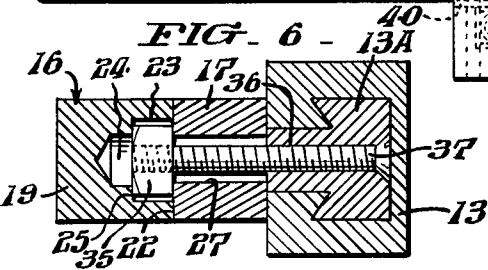


FIG. 6 -



INVENTOR.
Louis Blum,
BY
Paul & Paul
ATTORNEYS.

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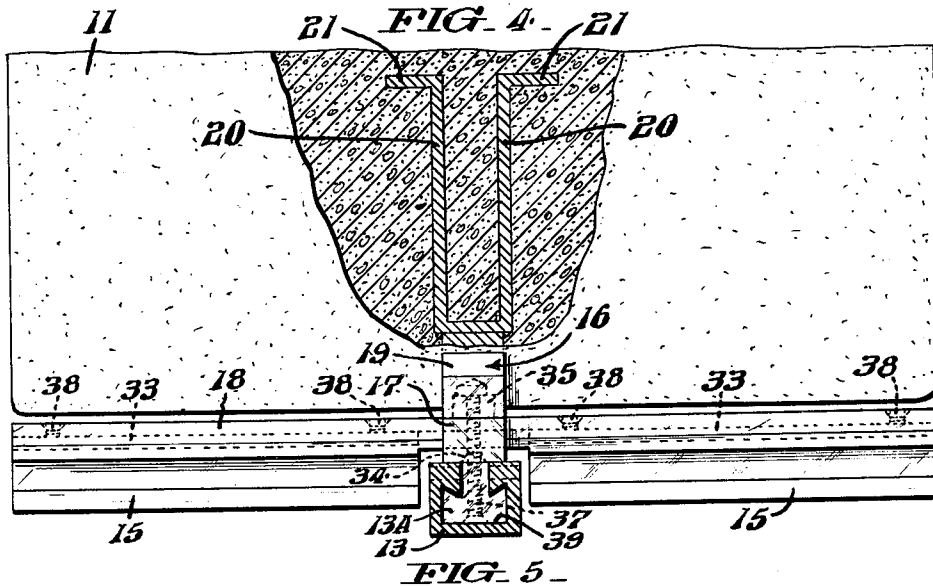
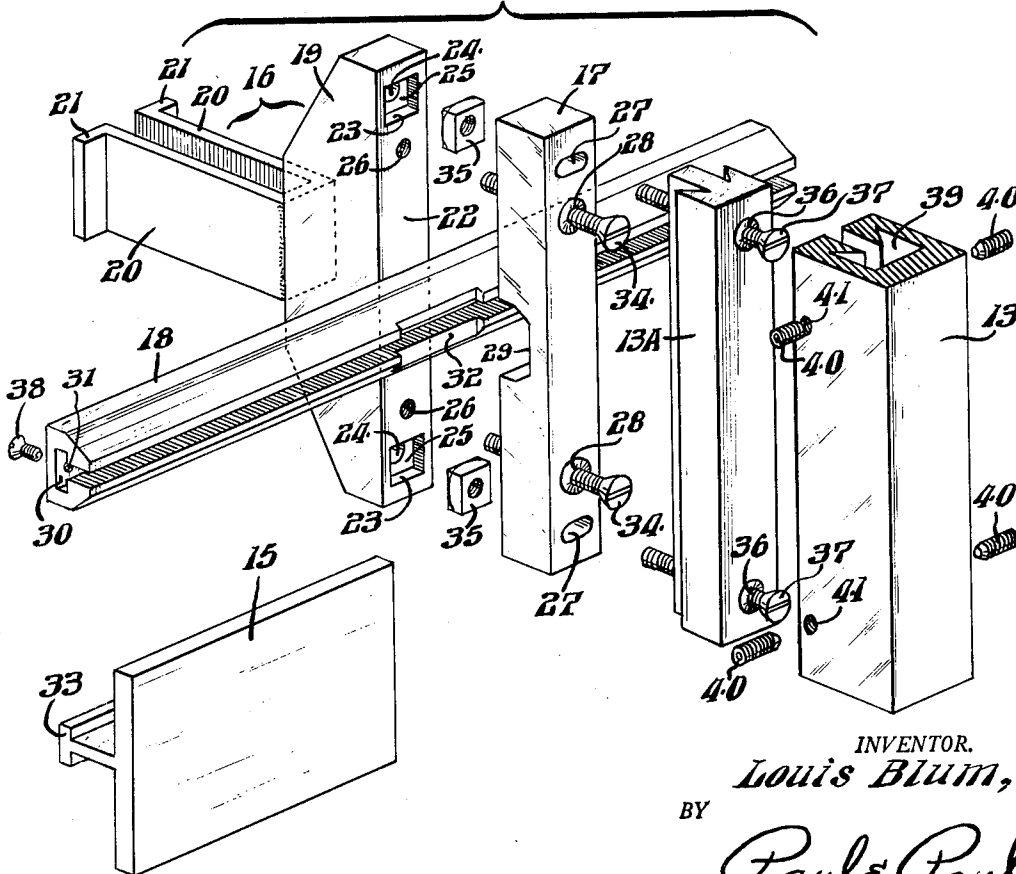
L. BLUM

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INVENTOR.
Louis Blum,
BY
Paul & Paul
ATTORNEYS.

Feb. 8, 1966

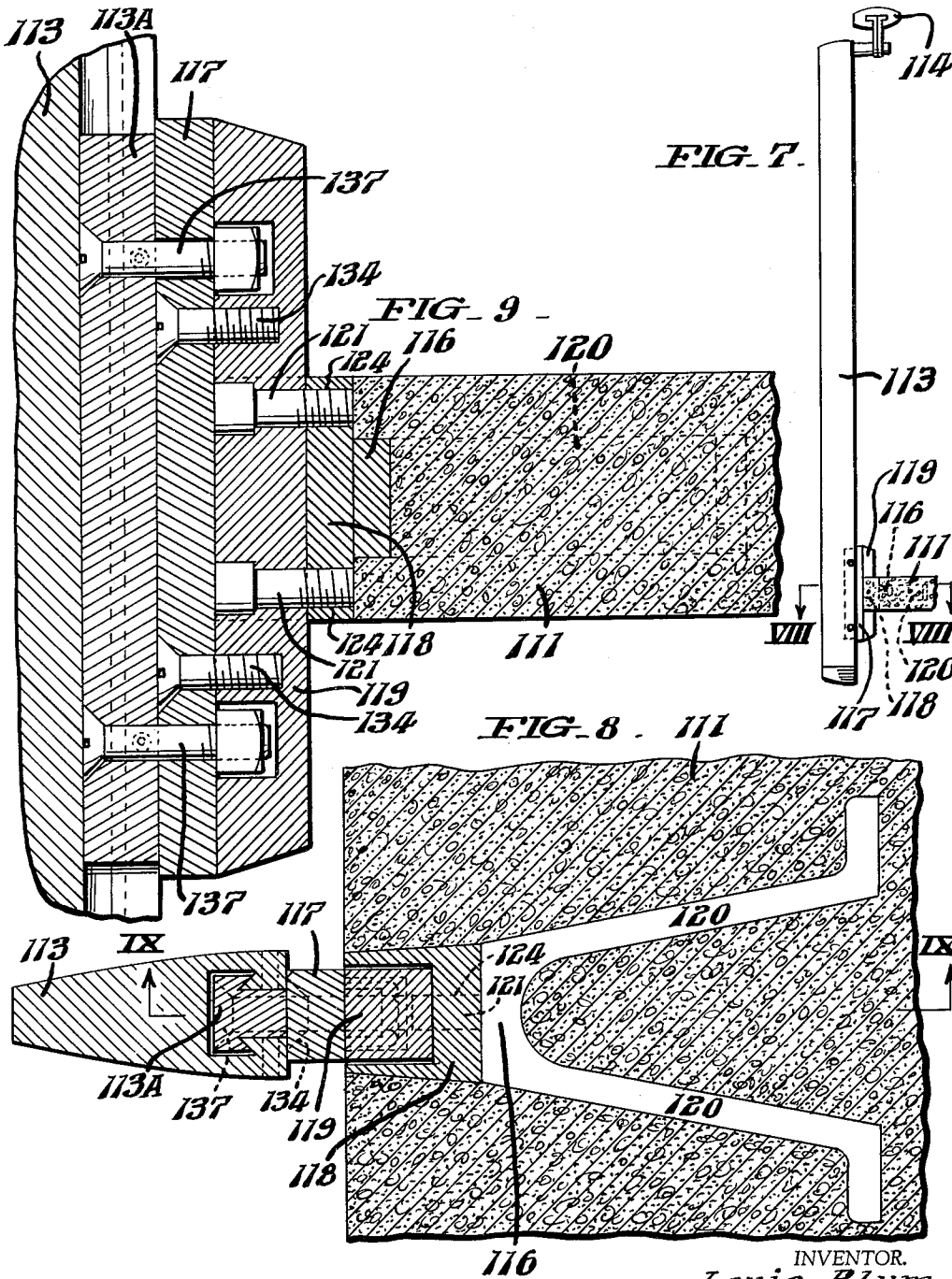
L. BLUM

3,233,377

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4 Sheets-Sheet 3



INVENTOR.
Louis Blum,
BY
Paul & Paul
ATTORNEYS.

Feb. 8, 1966

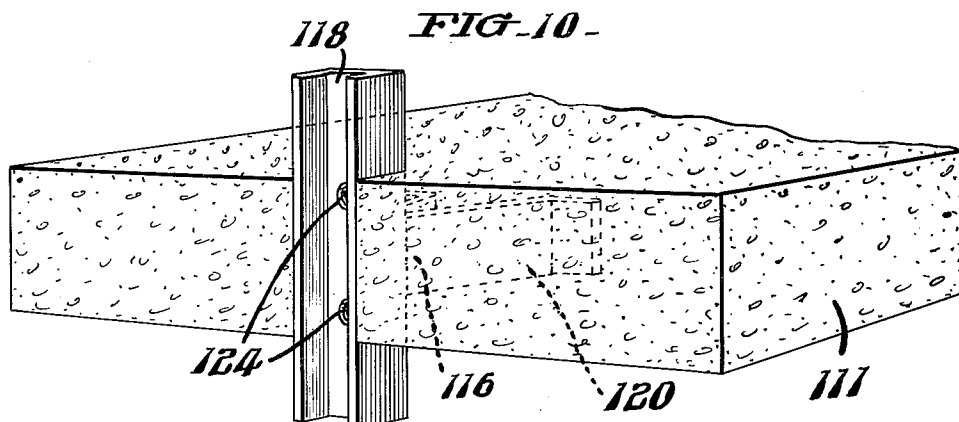
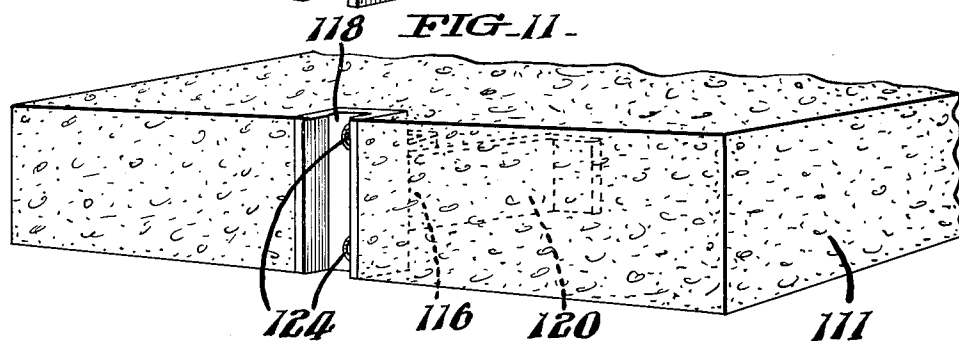
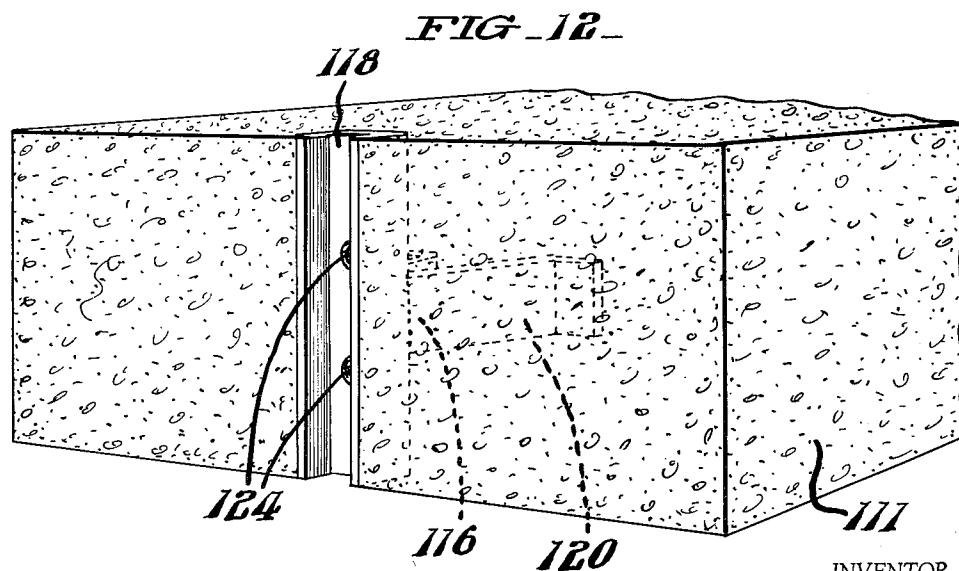
L. BLUM

3,233,377

ORNAMENTAL RAILING MOUNTINGS

Filed May 9, 1963

4 Sheets-Sheet 4



INVENTOR.
Louis Blum,
BY *Paul & Paul*
ATTORNEYS.

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3,233,377

ORNAMENTAL RAILING MOUNTINGS

Louis Blum, Pittsburgh, Pa., assignor to Blumcraft of Pittsburgh, Pittsburgh, Pa., a firm
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5 Claims. (Cl. 52—312)

This application is a continuation-in-part of application Serial Number 56,892, filed September 19, 1960.

This invention relates to ornamental railing mountings, and more particularly it relates to ornamental railing mountings for use on pre-cast stair treads having open ends such as concrete and the like.

The concurrent growth of the use of ornamental railing structures, and pre-cast masonry stairway treads of the open-end type, has resulted in the need for suitable means which will enable ornamental railing structures to be securely anchored upon such pre-cast treads. The conventional pre-cast masonry treads such as concrete and the like utilized in open-end stairway construction have a relatively small thickness with respect to their total width. For this reason, it is difficult to provide suitable substantial anchoring means within the limited thickness of masonry material which will safely support an ornamental railing structure.

Additionally, it is desirable in connection with the use of ornamental railing structures on open-end masonry tread stairways to provide means for effectively ornamenting the end of the stair treads.

Accordingly, it is an object of this invention to provide novel means for mounting ornamental railing structures on pre-cast open-end masonry stair treads.

It is another object of this invention to provide such mounting means in combination with means for decorating the open end of the stair treads.

It is another object of this invention to provide such mounting means whereby additional means is provided for permitting initial alignment of the mounting means with the railing itself.

It is another object of this invention to provide such mounting means which is adapted to be custom sized to the particular tread dimensions.

Other objects and advantages will become apparent from a reading of the following description and drawings wherein:

FIG. 1 represents an elevational view, partly broken away of a stairway having pre-cast concrete treads and having mounted thereon the ornamental railing structure supported by the apparatus of this invention;

FIG. 2 is a view taken in the direction of the arrows II—II of FIG. 1, and disclosing details of the mounting assembly of this invention, parts being broken away for greater definition;

FIG. 3 is a view taken in the direction of the arrows III—III of FIG. 2, of the apparatus of this invention;

FIG. 4 is a sectional view taken along the lines and in the direction of the arrows IV—IV of FIG. 3, parts being broken away to show internal structure;

FIG. 5 is an exploded perspective view of the apparatus of this invention; and

FIG. 6 is a detailed sectional view taken along the lines and in the direction of the arrows VI—VI of FIG. 2.

FIG. 7 is an end elevational view of another embodiment of the apparatus of this invention.

FIG. 8 is an enlarged sectional view taken along the lines and in the direction of the arrows VIII—VIII of FIG. 7;

FIG. 9 is a sectional view taken along the lines and in the direction of the arrows IX—IX of FIG. 8;

FIG. 10 is a perspective view showing one step in the process of installing the embodiment of the apparatus shown in FIGS. 7—9 in a specific stair tread;

2

FIG. 11 is a view similar to FIG. 10 showing another step in said process of installation.

FIG. 12 is a view similar to FIGS. 10 and 11 showing the adaption of the embodiment of the apparatus shown in FIGS. 7—9 to a different size stair tread.

In describing the preferred embodiment of the invention illustrated in the drawing, specific terminology has been resorted to for the sake of clarity. However, it is not the intention to be limited to the specific terms so selected, and it is to be understood that each specific term includes all technical equivalents which operate in a similar manner to accomplish a similar purpose.

It is to be understood that the form of this invention herewith shown and described is to be taken as a preferred embodiment. Various changes may be made in the shape, size and arrangement of parts. For example, equivalent elements may be substituted for those illustrated and described herein, parts may be reversed, and certain features of the invention may be utilized independently of the use of other features, all without departing from the spirit and scope of the invention as defined in the following description and claims.

Referring now to FIGURE 1, there is shown a stairway comprising a plurality of open-end pre-cast masonry treads 11 supported by a rigid structure 12 at a point away from the open-end of the tread, for example, in cantilever fashion. Each tread 11 has mounted thereon a railing structure comprising an upright post 13 and a handrail 14. Handrail 14 is secured to the upper ends of each post 13. The posts 13 are secured to treads 11 by means of the apparatus of this invention, which apparatus also secures ornamental facets 15 in an ornamental end covering relationship with each tread 11.

Referring now to FIGS. 2 and 3, the apparatus of this invention is seen as comprising in combination with adjacent portions of post 13 an anchor member 16, an intermediate spacing member 17, a post key member 13A, a facet holder 18 and individual facets 15.

Referring now to the exploded view of FIG. 5, it is seen that anchor member 16 comprises a right solid trapezoidal shaped body member 19 extending from which are a pair of integral legs 20, each leg having an out-turned flange 21 formed at the distal end thereof. The base surface 22 of body member 19 has a pair of rectangular socket openings 23 formed at the outer ends thereof, and a pair of cylindrical bores 24 formed therein, said bores 24 opening into the bottoms 25 of socket openings 23. A pair of threaded openings 26 are located medially of openings 23. The spacing member 17 is a right rectangular parallelepiped shaped solid body having formed in the distal ends thereof a pair of slot shaped bores 27, which bores extend from one base surface of the spacing member 17 to the corresponding opposing base surface thereof. A pair of tapped bores 28 are formed in the spacing member 17 inwardly of the slot shaped bores 27, and similarly extend through the opposing surfaces of member 17. The centers of bores 28 and 26 are equidistantly spaced, as are the centers of slot shaped bores 27 and the cylindrical bores 24. Spacer 17 has formed in one side thereof an irregularly shaped notch 29, the outline of which notch corresponds with the contour of the cross-section of the facet holder 18. Facet holder 18 has formed therein a longitudinal groove 30 having a T-shaped configuration. A plurality of tapped openings 31 are formed in the back surface of facet holder 18, the use of which will be hereinafter described. At the center of facet holder 18 on the grooved surface thereof there is formed a registering notch 32. Facets 15 which may be of any desired configuration for the purpose or ornamenting the end of the treads 11, have formed on one surface

thereof an upstanding T-shaped flange 33, the end of which is complementary to the shape of groove 30. The post key member 13A has a right solid configuration with an irregular T-shaped cross-section. Post 13 is interiorly grooved from the rear surface thereof, thereby forming groove 39 which has a cross-section substantially that of key member 13A, so as to allow a sliding fit between member 13A and groove 39. A plurality of set screws 40 serve to engage post 13 to key member 13A. For this purpose, a plurality of tapped bores 41 are formed in post 13.

During assembly of the mounting apparatus of this invention, the anchor 16 is first securely positioned within the form utilized for casting the masonry stair tread in such manner so as to assume substantially the final position shown in FIG. 2, with respect to the cast masonry material. It is seen from FIGS. 2 and 4, that a rigid anchoring means is thereby provided, which will provide support for the affixed railing structure. Upon removal of the pre-cast tread from its form with the now integral anchor 16 affixed thereto, final assembly of the mounting apparatus of this invention may be completed. Conventionally these stair treads 11 would be first incorporated in the final stairway construction, for example, that shown in FIG. 1, before mounting of any of the railing components thereon. To mount the railing structure, referring to FIG. 5, spacing member 17 and facet holder 18 are arranged in right angled relationship with each other such that facet holder 18 fits within the complementary notch 29 of spacing member 17, the registering notches 32 of holder 18 abutting the sides of spacer 17. This assembly of holder 18 and spacing member 17 is then attached to the body member 19 of anchor 16 by means of screws 34 which are inserted through tapped bores 28 and registering with threaded openings 26. The screws 34 are tightened to rigidly unite anchor 16, facet holder 18 and spacer 17.

Before tightening screws 34, a pair of nuts 35 are registered within socket openings 23, their sizes being such that they do not extend beyond the base surface 22 of body member 19. Key member 13A has formed therein two spaced bores 36, their center distance being equal to that of the center distance of bores 24. To mount key member 13A bores 36 are aligned respectively with slots 27 and bores 24. A pair of elongated screws 37 are then threaded through bores 36 through slots 27, into nuts 35, and extending slightly within bores 24. This relationship is best shown in the detailed FIG. 6, wherein it is seen that a limited amount of room for adjustment exists between screws 37 and the sides of slots 27, between the nuts 35 and the sides of the openings 23, and between the ends of the screws 37 and the sides and end of bores 24. Post 13 is then sleeved upon key member 13A and secured thereto by means of set screws 40 which are threaded through bores 41. Accordingly, key member 13A and post 13 may be finally adjusted in a vertical plane for registry with the handrail 14 before screws 37 are tightened. After such registering step, post 13 is removed from key member 13A and screws 37 tightened. Upon tightening screws 37, key member 13A is rigidly connected to spacer 17 by means of the screws 37 and corresponding nuts 35. Finally post 13 is repositioned in engagement with key member 13A and set screws 40 are again tightened. Either before or after this final step in assembly, the ornamental facets 15 may be associated with the groove 30 of facet holder 18, and secured therein by means of a plurality of screws 38 extending through the back surface facet holder 18 and bearing upon flange 33 of facet 15.

The above-described apparatus provides an effective ornamental mounting structure for pre-cast masonry treads having several distinct advantages. When used with ornamental structures, the device of this invention permits the continuation of an ornamental design through-

out the railing structure while at the same time functioning to securely mount the railing structure upon the open-end treads. Additionally, a simplified adjustment is provided which obviates misalignment of the anchor member of the apparatus of this invention occurring during the initial casting of the tread with the anchor member incorporated therein. It is important that all of these advantages are accomplished while observing the limited working area of the thinly dimensioned masonry treads.

Another embodiment of the invention is illustrated in FIGS. 7-12. A portion of a pre-cast masonry tread 111 is shown supporting an anchor 116 imbedded therein. The anchor is provided with leg 120 which are so positioned as to give maximum support to the anchor 116. The anchor 116 in turn supports post 113 which carries railing 114. The forward portion of anchor 116 is a hollowed out channel member 118. Into this channel member 118 is fitted the trapezoidal shaped body member 119 which is secured by means of bolts 121. Intermediate spacing members 117 is secured to trapezoidal member 119 by means of bolts 134. Key member 113A is connected to the intermediate member 117 by means of bolts 137 and key member 113A is mounted in post 113. The principal function of this embodiment of the invention is illustrated in FIGS. 10-12. The channel member 118 is manufactured to a pre-determined minimum length. This length is selected in order to accommodate the thickest pre-cast stair tread which will normally be encountered in commercial buildings. The anchor 116 is shown in FIG. 12 in place in a stair tread of maximum thickness in which case the channel member 118 corresponds in length to the thickness of tread 111. In FIG. 10 the anchor 116 is shown in a relatively narrow stair tread with the excess portions of the tread extended above and below the opposed faces of the tread. The excess portions of the channel member 118 may be easily cut off flush with the tread surface leaving the channel member 118 as illustrated in FIG. 11. By connecting the trapezoidal member 119 through bolts 121 inserted in threaded bolt holes 124 the entire post assembly may be erected as heretofore described.

It will be apparent that in addition to the many advantages provided by the first embodiment of the invention this construction makes it possible to produce by mass production a uniformly sized anchor post which can be easily and cheaply adapted to fit any size pre-cast tread.

This is extremely valuable in normal building. If the anchor for the railing post is limited to a fixed dimension which is longer than the thickness of the stair tread then it will project above and below the opposed faces of the tread. Since it is necessary to cast the anchor in the tread this means that these excess portions of the anchors will be exposed from the time the treads are put in place on the stairway. This makes it difficult to polish the treads in place which is normally desired. By means of this construction it is possible to cast the anchors in the treads and to cut them off flush with the tread surface and then subsequently to install the entire post assembly.

While the preferred embodiments of this invention have been described in some detail it will be obvious to one skilled in the art that various modifications may be made without departing from the invention as hereinafter claimed.

Having thus described my invention, I claim:

1. In anchoring apparatus for adjustably supporting a railing assembly upon an open-ended masonry stair tread the combination comprising anchor means adapted for fixed imbedment in a masonry stair tread, said anchor means having an elongated portion thereof adapted to extend without said tread at substantially right angles with the plane of said tread; an elongated spacing member complementally configured with the exposed portion of said anchor means for abutment therewith, said spacing member and anchor means being detachably joined together so as to prevent relative movement

5

therebetween; a pair of aligned recesses formed in the elongated portion of said anchor means; a pair of aligned slot-shaped bores formed in and extending through said spacing member and correspondingly aligned with said aligned recesses; threaded nut means disposed in loose fitting relationship within each of said aligned recesses; an elongated key member adapted to abut said spacing member and having formed therein a pair of aligned bores extending through said key member and correspondingly aligned with said slot-shaped bores and said aligned recesses; screw means extending through said bores of said key member and extending through and in adjustable relationship with said slot-shaped means and threaded into said nut means, wherein said key member has a configuration adapted to receive a complementally configured railing post member thereon in adjustable sliding engagement therewith; and means for supporting the railing post member in engagement with said key member.

2. The structure in accordance with claim 1 wherein said spacing member has formed medially thereof a notch extending transversely thereof, facet holding means complementally configured to and in fixed arrangement with said notch and facet means mounted upon said facet holding means.

3. The structure in accordance with claim 1 wherein the elongated portion of the anchor means is provided with a pair of spaced bores and further comprises a channel-shaped member embedded in said stair tread having the thickness of said tread and having bored openings coincident with the openings in said elongated member and connecting bolt means passing through said aligned openings connecting said elongated member to said channel member.

4. In apparatus for anchoring a railing assembly upon the open end of a masonry stair tread, the combination comprising anchor means adapted for fixed imbedment in the open end of said masonry stair tread, said anchor means having an elongated part adapted for extending substantially at right angles to the plane of said tread, and a pair of recesses respectively formed in longitudinally spaced portions of said elongated part and adapted for facing outwardly from the open end of said masonry stair tread, a pair of nuts loosely but non-turnably nested re-

6

spectively in said recesses, an elongated spacing member detachably secured to the elongated part of said anchor means and covering said recesses and the nuts nested therein, an elongated key member abutting said spacing member, and screws each extending freely through said key and spacing members and threaded into one of said nuts, said key member being adapted for slidably receiving a railing post.

5. In apparatus for anchoring a railing assembly upon the open end of a masonry stair tread, the combination comprising anchor means adapted for fixed imbedment in the open end of said masonry stair tread, said anchor means having an elongated part channel shaped in transverse section and adapted for extending substantially at right angles to the plane of said tread, an elongated body member nested in said channel shaped part and detachably secured thereto, said body member having a pair of recesses formed in longitudinally spaced portions thereof and adapted for facing outwardly from the open end of said masonry stair tread, a pair of nuts loosely but non-turnably nested respectively in said recesses, an elongated spacing member detachably secured to said body member and covering said recesses and the nuts nested therein, an elongated key member abutting said spacing member, and screws each extending freely through said key and spacing members and threaded into one of said nuts, said key member being adapted for slidably receiving a railing post.

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FRANK L. ABBOTT, *Primary Examiner.*

JACOB L. NACKENOFF, *Examiner.*