

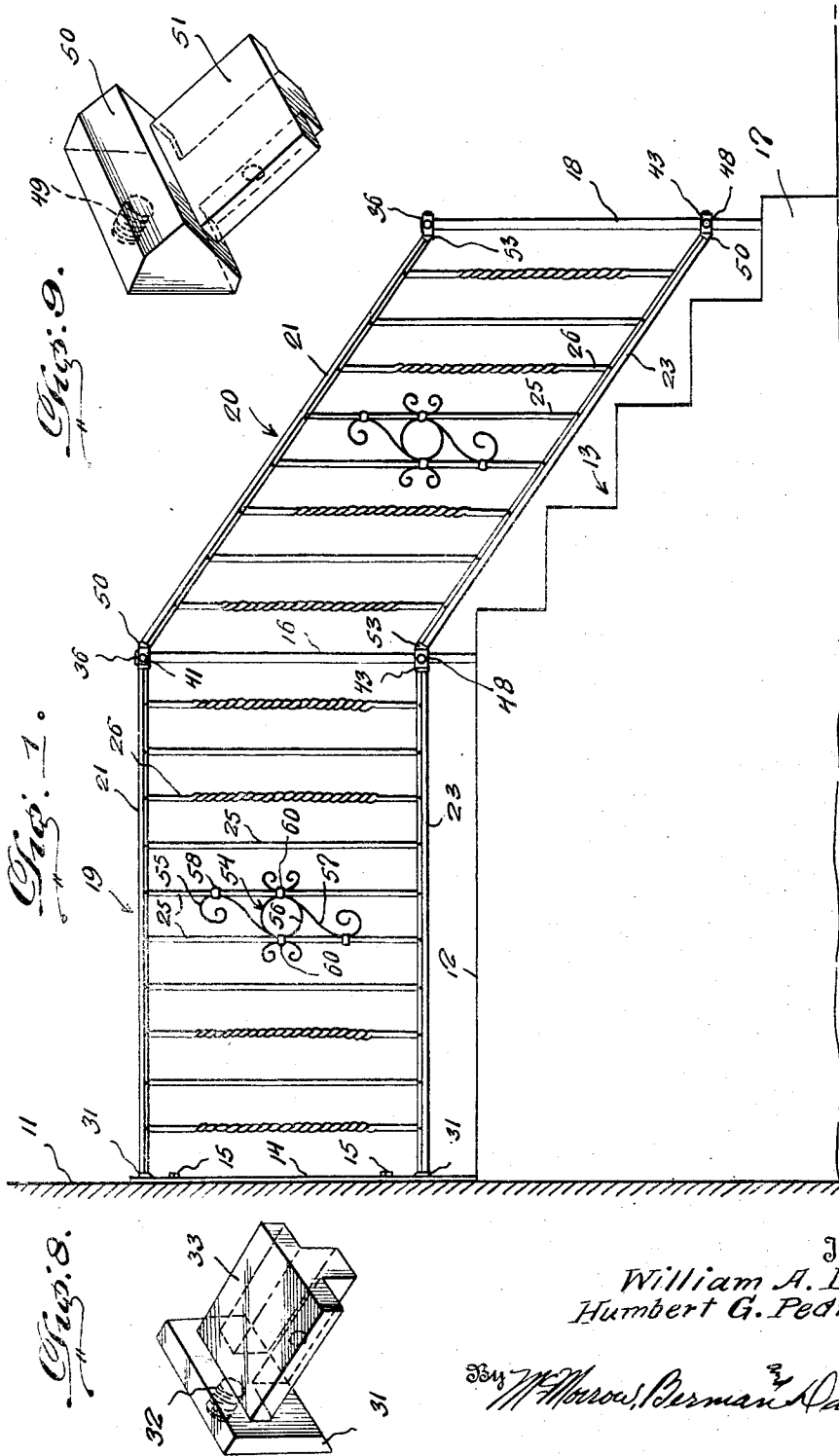
June 26, 1951

W. A. LAPP ET AL
IRON RAILING

2,558,142

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Fig. 2.

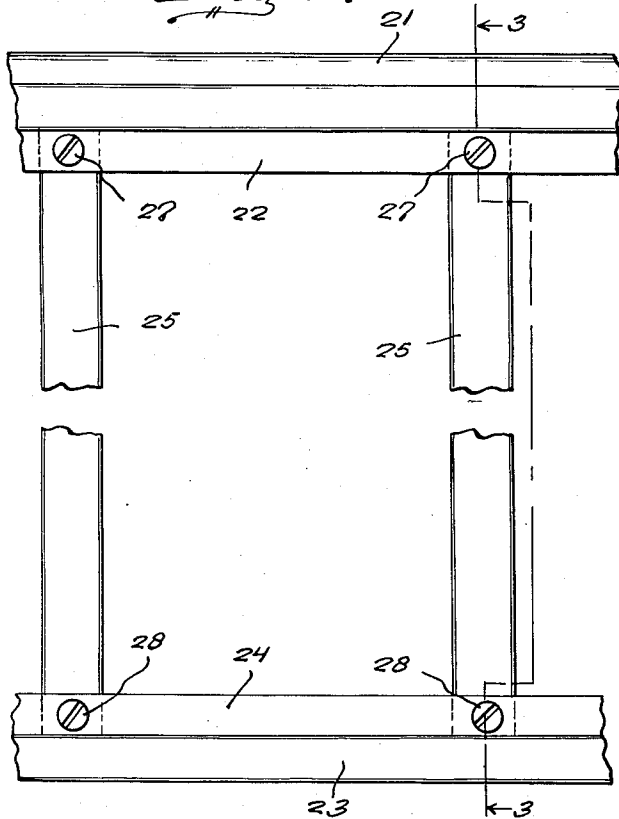


Fig. 3.

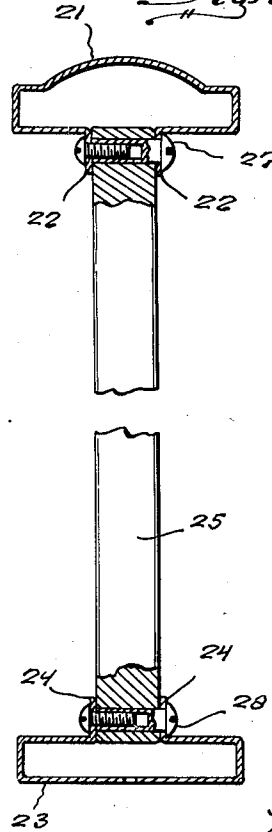


Fig. 4.

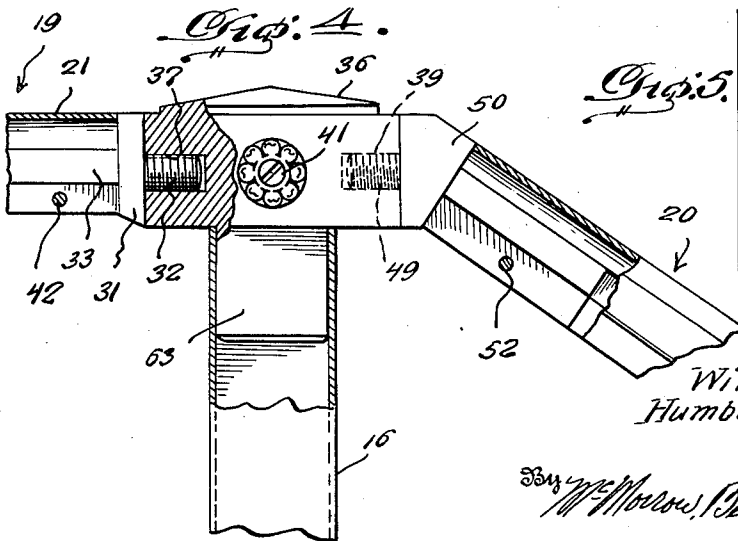
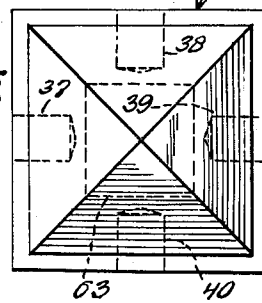


Fig. 5.



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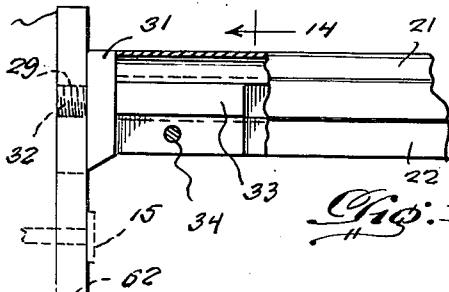


Fig. 13.

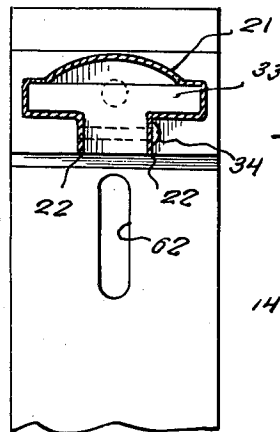


Fig. 14.

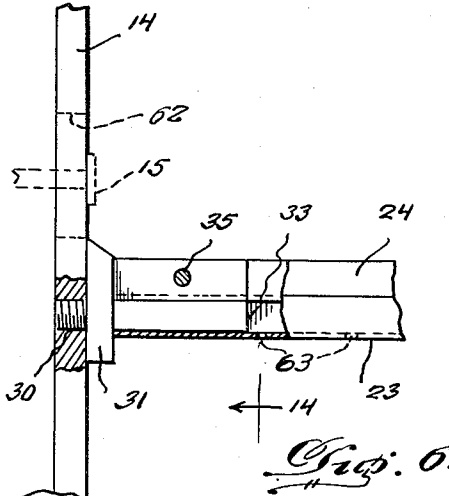


Fig. 6.

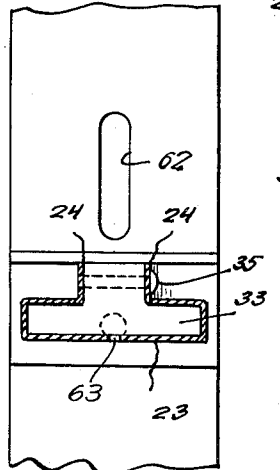


Fig. 10.

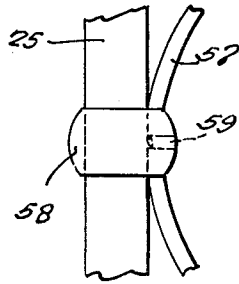


Fig. 11.

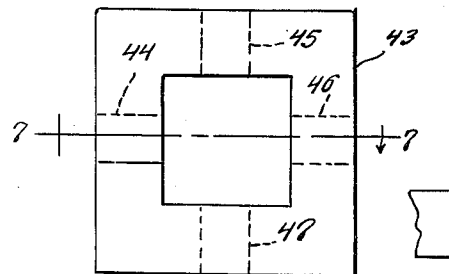


Fig. 12.

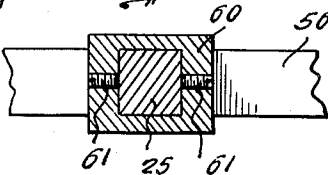
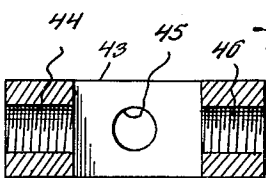


Fig. 7.



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UNITED STATES PATENT OFFICE

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IRON RAILING

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1 Claim. (Cl. 256—21)

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This invention relates to railings, and more particularly to stairway railings of the ornamental type.

A main object of the invention is to provide a novel and improved railing structure for staircases and landings, said structure being very simple in arrangement, easy to install and neat in appearance.

A further object of the invention is to provide an improved ornamental stair railing structure which may be readily assembled at the desired location from prefabricated standardized components, said components being inexpensive to manufacture and being of such a nature that the same components may be employed to fabricate railings for stairways of widely differing characteristics without requiring a special assembly for each stairway.

A still further object of the invention is to provide an ornamental stairway railing structure which may be sold in separate standard components, whereby an individual may select those components required for his particular stairway and assemble the railing structure piece by piece without requiring the services of a skilled craftsman, the structure being very easy to erect and the railing panels being adaptable for use either horizontally, as on a stair landing, or in inclined position adjacent a flight of steps.

Further objects and advantages of the invention will become apparent from the following description and claim, and from the accompanying drawings, wherein:

Figure 1 is a side elevational view of an ornamental stair railing constructed in accordance with the present invention.

Figure 2 is an enlarged detail view in elevation of an intermediate portion of one of the railing panels of the structure of Figure 1.

Figure 3 is a cross-sectional detail view taken on line 3—3 of Figure 2.

Figure 4 is an enlarged detail view, partly in cross-section, of the junction of the upper horizontal and inclined rails of the structure of Figure 1.

Figure 5 is a top plan view of a joint member employed in the structure shown in Figure 4.

Figure 6 is an enlarged top plan view of a collar member employed to connect rail members to vertical posts in the structure of Figure 1.

Figure 7 is a cross-sectional view taken on line 7—7 of Figure 6.

Figure 8 is an enlarged perspective view of a securing stud member employed to secure a hori-

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zontal rail to a vertical support in the structure of Figure 1.

Figure 9 is an enlarged perspective view of a stud member employed to secure an inclined rail to a top joint member or to a collar member in the structure of Figure 1.

Figure 10 is an elevational enlarged detail view showing the securing means for a bottom portion of an ornamental scroll in the structure of Figure 1.

Figure 11 is an elevational enlarged detail view showing the securing means for the intermediate portion of an ornamental scroll in the structure of Figure 1.

Figure 12 is a cross-sectional view taken on line 12—12 of Figure 11.

Figure 13 is an enlarged elevational detail view, partly in cross-section, showing the means for securing the end of the horizontal rail sections to a vertical support in the structure of Figure 1.

Figure 14 is a cross-sectional view taken on line 14—14 of Figure 13.

Referring to the drawings, 11 designates the vertical wall of a building adjacent a doorway located at the top landing 12 of a flight of steps 13. Secured to wall 11 adjacent the doorway is a vertical supporting bar 14 which is anchored in the wall by suitable bolts 15, 15. Anchored in top landing 12 adjacent steps 13 is a hollow vertical post member 16 which has a square cross-sectional shape, and anchored in the lowest step 17 of the flight 13 is a similar hollow vertical post 18 substantially identical with post 16.

Secured between vertical bar 14 and post 16 is a first railing panel, indicated generally at 19, and secured between post 16 and post 18 is an inclined second railing panel, indicated generally at 20. Each panel comprises a hollow top rail section 21 having depending longitudinal flanges 22, 22, a hollow bottom rail section 23 having upwardly projecting longitudinal flanges 24, 24, and a plurality of vertical upright bars of either plain or ornamental contour, shown respectively at 25 and 26, pivotally secured by respective top and bottom sleeve bolts 27 and 28 between the depending flanges 22, 22 and the upwardly projecting flanges 24, 24 of the respective top and bottom rail sections.

Vertical supporting bar 14 is tapped adjacent its upper end, as shown at 29, and adjacent its lower end, as shown at 30. Stud members 31 are provided at said supporting bar, each stud member having a threaded shaft portion 32 which is threaded into the tapped hole in the vertical bar 14, and a horizontally projecting T-shaped lug

portion 33 which telescopes into a rail section. The top stud member has a stem of its T-shaped lug portion projecting downwardly so that it will be received between the depending flanges 22, 22 of top rail section 21 and the bottom stud member has the stem of its T-shaped lug portion projecting upwardly so that it will be received between the upwardly projecting flanges 24, 24 of the bottom rail section 23. The stems of the respective T-shaped lug portions are secured to the respective pairs of flanges 22, 22 and 24, 24 by respective bolts 34 and 35, thus forming rigid joints between the stud members and the rail sections.

Telescoped into the top of hollow post member 16 is the depending square stud 63 of a square cap 36 having a head portion which is centrally tapped on all four sides, as shown at 37, 38, 39 and 40 in Figure 5. Decorative screws 41 fill the tapped holes 38 and 40. Threaded into the tapped hole 37 is the threaded shaft 32 of a stud member 31. The T-shaped lug portion 33 of the stud member is telescoped into the end of top rail section 21 and secured thereto by a bolt 42. Secured to the lower portion of post member 16 is a square collar 43 which is centrally tapped on all four sides, as shown at 44, 45, 46 and 47 in Figure 6. Decorative set screws 48 are threaded into tapped holes 45 and 47 for securing the collar to post 16. Threaded into the tapped hole 44 is the threaded shaft 32 of a stud member 31 whose T-shaped lug portion is telescoped into and secured to the bottom rail section 23, thus completing the rigid securement of the horizontal rail panel 19.

Threaded into the tapped hole 39 of cap member 36 is the threaded shaft 49 of an angled stud member 50. Angled stud member 50 has an inclined T-shaped lug portion 51 projecting therefrom which telescopes into the top rail section of inclined rail panel 20 and is rigidly secured thereto by a bolt 52 passing through the depending flanges of said top rail section and the stem portion of the T-shaped lug. Similarly, threaded into the tapped hole 46 of the square collar 43 at the lower portion of post 16 is the threaded shaft 49 of an angled stud member 53 whose T-shaped lug portion is telescoped into and rigidly secured to the lower rail section of inclined rail panel 20. A cap member 36 is provided on the top of end post 18, and threadedly secured to said cap member is an inverted angled stud member 53. The angled stud members 53 are similar to stud member 50, except that the stems of their T-shaped lug portions are inverted, as compared with the lug portion 51 of stud 50. An angled stud member 50 is employed at the lower portion of end post 18, the threaded shaft thereof being threadedly engaged with a tapped hole in a square collar 43 secured to the lower portion of the end post. The T-shaped lug portion 51 of said member 50 is telescoped into and rigidly secured to the lower rail section of the inclined rail panel 20. As above described, an angled stud member identical with the inverted stud member 53 is employed to connect the lower rail section of inclined panel 20 to the square collar 43 at the lower portion of the central post 16. This completes the rigid securement of inclined rail panel 20.

Secured between adjacent uprights 25 at desired locations in the rail panels are decorative scrolls 54. The scrolls have top end portions 55 engaging an upright 25 at one side thereof, intermediate portions 56 engaging both adjacent

uprights, and lower portions 57 engaging the upright 25 at the other side of the scroll portion. The top and bottom scroll portions carry collars 58 receiving an upright 25, and secured thereto by set screws 59. The intermediate portion of the scrolls carry collars 60, each also receiving an upright 25 and secured thereto by set screws 61, 61. By loosening the set screws 59 and 61, the rail panel may be angled to a desired inclined configuration without being obstructed by the decorative scroll. After the desired configuration has been obtained, the set screws 59 and 61 may be tightened to secure the scroll in its final position.

From the above description, it will be seen that stair rail structures may be provided for a wide range of stair flight conditions using a minimum number of different stock parts. The top and bottom rail sections may be readily cut to size at the job to suit the dimensional requirements of the stairway and the specialized skill of a craftsman is not required to accomplish the installation. The various stud members, posts, collars, caps and other pieces may be fabricated by mass production methods and ordered as required for a given installation. The finished stair rail structure provides a neat appearance and is mechanically rigid.

The vertical supporting bar is formed with vertical slots, shown at 62, 62, to receive the anchoring bolts 15, 15, so as to provide a range of flexibility as to the distance between said anchoring bolts in accordance with variations in available anchorage for securement to the building wall.

Drain openings 63 are provided in the bottom rail section 23.

While a specific embodiment of a stairway railing structure has been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore, it is intended that no limitations be placed on the invention other than as defined by the scope of the appended claim.

What is claimed is:

A railing structure including top and bottom rails, each rail having a pair of longitudinal flanges projecting therefrom, the flanges of the top rail projecting downwardly and those of the bottom rail projecting upwardly, a plurality of uprights secured at their ends between the respective rail flanges, vertical supports for supporting the ends of said rails, a pair of base means detachably carried by each of said vertical supports in vertically spaced relation, said base means each being formed with laterally directed threaded sockets, support means, each support means including a threaded stud threadedly engageable in one of said threaded sockets, each rail being formed with an end recess, each support means including an outwardly directed lug complementary to an end recess of a rail and adapted to fit telescopically thereinto, said support means including outer surfaces complementary to said ends of said rails and adapted to abut therewith to conceal said lugs, at least one of said vertical supports having a free upper end formed with an upwardly directed socket, and one of said base means comprising an ornamental cap including a depending stud seatable in said upwardly directed socket.

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