

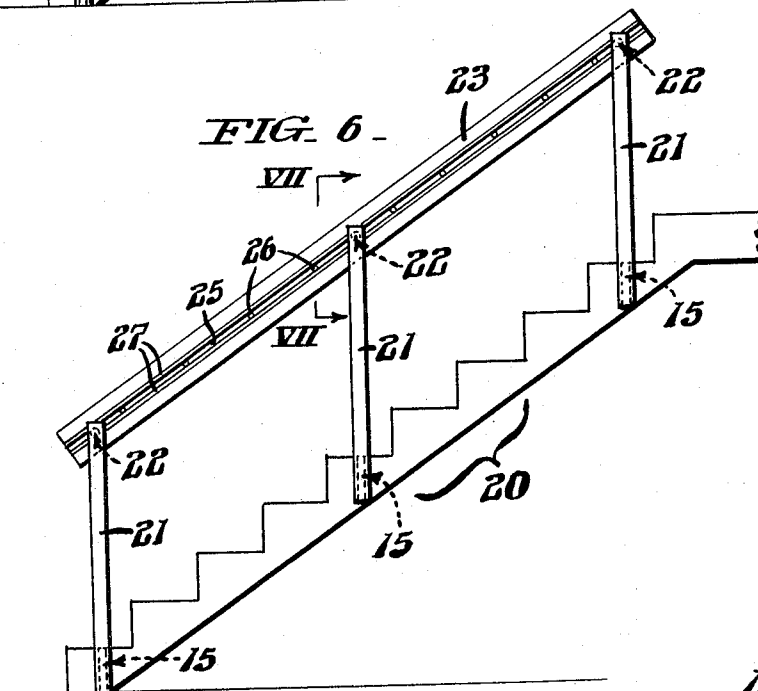
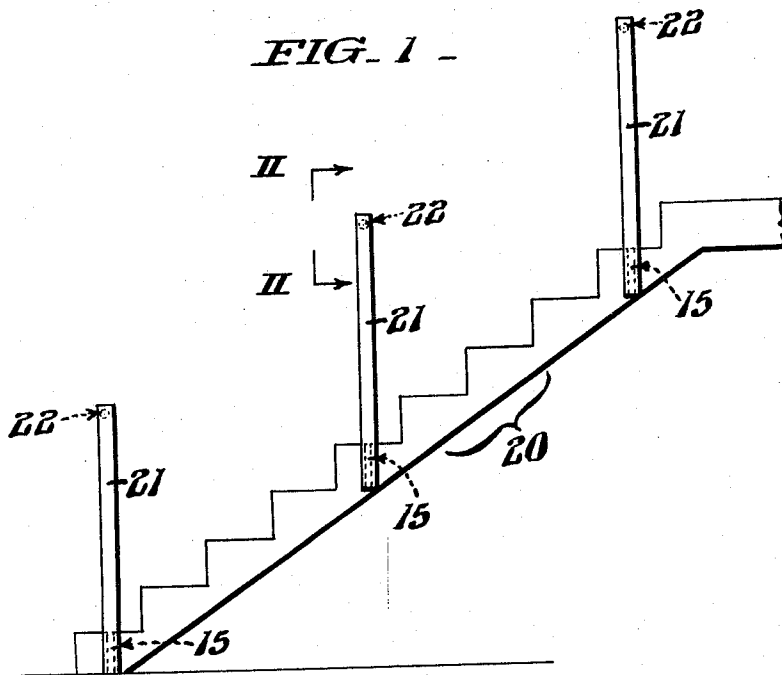
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L. BLUM ETAL
ORNAMENTAL RAILING STRUCTURE

3,300,192

Filed Oct. 30, 1964

3 Sheets-Sheet 1



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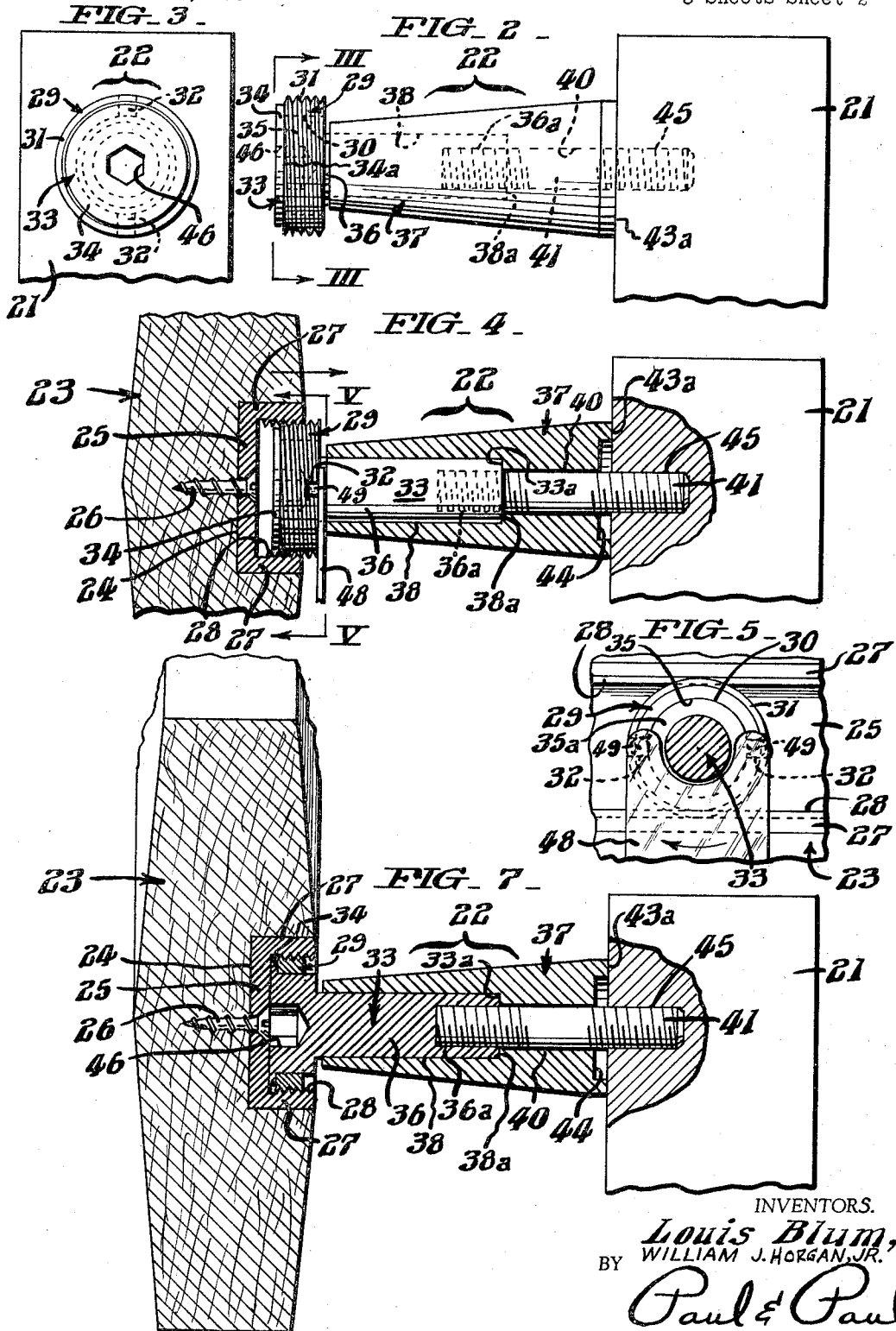
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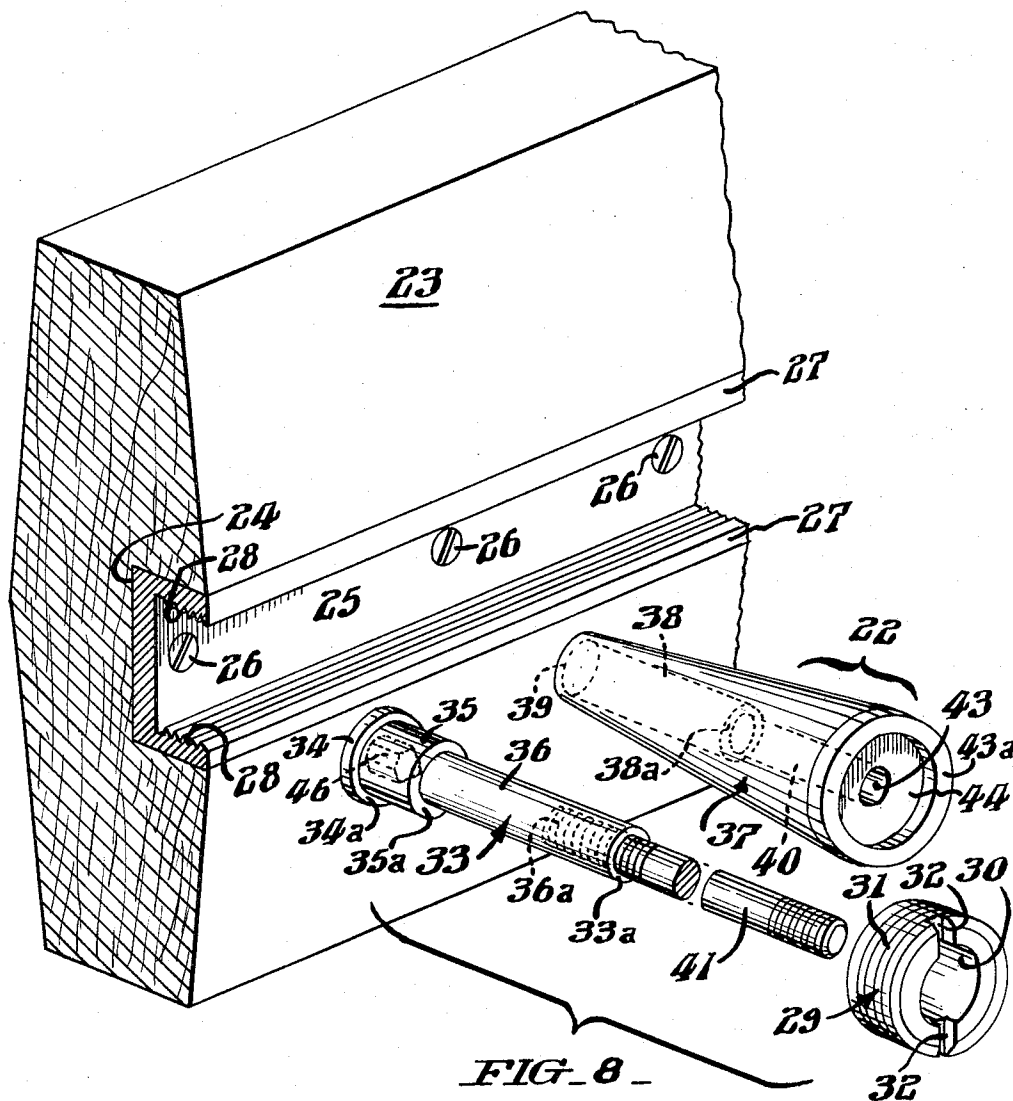
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ORNAMENTAL RAILING STRUCTURE
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This invention relates to ornamental railings and the like.

There has long been a need in the field of ornamental railings for a railing structure which is adjustable. This need arises from the fact that it often occurs in the construction of a building that the stairways are not exactly in line or precisely as indicated in the architect's drawings. Minor variations in pitch or alignment can result in considerable variance between the stairway and the railing mounted thereon. Since the railing must be made up of parts which are prefabricated or preformed, it is essential that the parts of the railing either be perfectly fitted and adapted to the stairway as it is actually in place or that many degrees of adjustability be provided between the stairway and the railing.

It is accordingly the principal object of this invention to provide an adjustable railing structure for use in ornamental railings and the like which will provide the maximum degree of adjustability among the various parts of the railing in its assembly on a stairway.

Other objects and advantages of the invention will become more fully apparent hereinafter and in the drawings in which:

FIGURE 1 is a side view in elevation showing part of a staircase with railing posts attached;

FIGURE 2 is a view taken along the lines II—II of FIGURE 1 illustrating the manner in which the slidable fitting of the present invention is attached to one of the railing posts;

FIGURE 3 is a view taken along the lines III—III of FIGURE 2;

FIGURE 4 is a view similar to FIGURE 3 and shows in partial cross-section the manner in which the fitting is attached to the railing and railing post;

FIGURE 5 is a view taken along the line V—V of FIGURE 4 showing the wrench which is used to fasten the fitting to the railing;

FIGURE 6 is a side view in elevation of the staircase showing the railing held in place using the fittings of this invention;

FIGURE 7 is a view taken along the lines VII—VII of FIGURE 6 showing in partial cross-section the manner in which the assembled fitting maintains the railing to the railing post;

FIGURE 8 is an exploded perspective view of the adjustable fitting embodying features of the invention;

The following description is directed to the specific forms of the apparatus as shown in the drawings and is not intended to be addressed to the scope of the invention itself which is capable of being practiced in a wide variety of forms and arrangements.

In FIGURE 1 there is shown a staircase 20, and a series of upright railing posts 21 placed at uniform intervals thereon. The dotted lines at the top of each post 21 indicate part of the fitting assembly, which is generally referred to by the number 22.

The various components which form the fitting assembly are illustrated in FIGURE 8. Thus, there is shown a section of the railing 23 having a recess 24 into which a track or channel 25 has been secured by means of screws 26. Track 25 has opposed sides or legs 27, the inner surfaces of which are formed with complementary longitudinally extending grooves 28.

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Also shown in FIGURE 8 is a nut 29, a pivot member 33, a cone-shaped housing 37 and a threaded stud 41.

Nut 29 is characterized by an axially extending bore 30, external threads 31 and an opposed pair of notches 32, the latter being formed in the lip of one end of the nut.

Pivot member 33 is formed with a radially extending flange 34 at one end providing a circular shoulder 34a around the base of the pivot. Abutting flange 34 is a cylindrical portion 35 having an axial length slightly greater than that of the bore 30 of nut 29 and a diameter slightly less than that of said bore 30. Abutting portion 35 is another cylindrical portion 36 which has a smaller diameter than portion 35, thereby forming a shoulder 35a.

Portion 36 has a threaded bore 36a adapted to receive one end of stud 41, as shown in FIGURE 8.

Cone-shaped housing 37 has a bore 38 which communicates with a bore 40 of lesser diameter, thereby forming an internal shoulder 38a. Bore 38 forms an opening 39 in the tapered end of the member 37, and has a diameter slightly larger than the diameter of cylindrical portion 36 of pivot 33. Bore 40 has a diameter slightly greater than that of stud 41 and terminates in an opening 43 formed in the recessed end 44 of the cone-shaped housing 37.

To assemble the fitting, the threaded stud 41 is first screwed into an accommodating threaded bore 45 in railing post 21. Cone-shaped housing 37 is inserted over stud 41, and since the length of bore 40 is less than that of stud 41, the stud will extend partially into bore 38. Nut 29 is then inserted over cylinder portion 35 of pivot 33 and rests against shoulder 34a of flange 34. Pivot 33 is inserted into opening 39 of cone-shaped housing 37 so that threaded bore 36a of pivot 33 engages the end of stud 41. Pivot 33 is then rotated by placing an Allen wrench into socket 46 formed in the face of flange 34 (FIGURE 3), and the rotation serves to screw bore 36a onto stud 41 so that shoulder 33a of pivot 33 comes into contact with shoulder 38a within cone 37. Thus, cone 37 is forced against post 21 so that lip 43a of the larger end 44 of said cone is held tightly flush against the post, as indicated in FIGURES 2 and 4. When in place, the tapered end of cone 37 rests adjacent shoulder 35a of cylinder portion 35, and the nut 29 will be capable of rotational movement about portion 35 of pivot 33.

After assemblies 22 are attached to the posts 21, faulty alignment of the staircase often makes it necessary to adjust the height of individual posts so that the assemblies 22 are brought into alignment. To facilitate this operation, the type of adjustable post and associated mounting assembly disclosed in my pending application Serial No. 280,191, filed May 9, 1963 is preferably used. In the present case, the location of the mounting assembly is indicated generally by the numeral 15 in FIGURES 1 and 6.

To attach railing 23 to the railing posts, the track 25 of the railing is placed adjacent to nut 29. The nut is then rotated (FIGURES 4, 5) by means of a wrench 48 which has prongs 49 adapted to engage the slots 32 in the lip of nut 29. As the nut is rotated the railing is drawn inward toward the fitting. When the nut 29 is screwed entirely into the track 25, the base of flange 34 will abut the back of the track, as indicated in FIGURE 7. The railing is thus held firmly in place by the engagement of threads 31 of nut 29 in grooves 28 of track 25.

It is to be noted that due to the unique flexibility of the presently described fitting, there is no fixed angle which the railing must take with respect to posts 21, i.e., the railing may be placed in any position in a plane through its own longitudinal axis. This advantage is a con-

sequence of the grooved construction of track 25, circular nature of nut 29 and also because said nut is carried on portion 35 of pivot 33 in such a manner that it may freely rotate thereon. Thus, nut 29 may be inserted within track 25 of railing 23 regardless of the particular angular relation between said railing and the axis of said nut.

It is to be clearly understood that the terms and expressions used herein are employed as terms of description, and not of limitation, and that there is no intention in using such terms and expressions to exclude any equivalents of the apparatus or method described. It is also to be clearly understood that what is specifically shown and described herein represents a preferred embodiment only of the invention, and that various changes and equivalents may be resorted to without departing from the principals of the invention or the scope of the claims hereof. Accordingly, it is intended to claim the present invention broadly, as well as specifically, as indicated in the appended claims.

What is claimed is:

1. In an ornamental rail structure, the combination comprising a post, a stud extending laterally from said post, a sleeve with one end portion fitted over said stud and abutting said post, an elongated pivot member with one end fitted into the other end portion of said sleeve and threaded onto said stud, said pivot member being operative to clamp said sleeve against said post, a radially outwardly extending integral flange on the other end of said pivot member disposed in spaced relation to said sleeve, an externally threaded nut fitted over said pivot member and disposed between said sleeve and flange, and a railing having a longitudinally extending channel therein with

parallel threads on opposed walls thereof, said nut being threaded into said channel and thereby positioned for clamping said flange against the base wall of said channel.

2. The combination according to claim 1 wherein the end of the sleeve abutting the post is centrally bored for receiving the stud, and the end of the sleeve remote from said post is counterbored for receiving the pivot member and for providing an annular shoulder abutting the end of said pivot member accommodated by said counterbore.

3. The combination according to claim 1 wherein an enlarged diameter portion of the pivot member extending outwardly from the sleeve and into the channel is provided with an axially extending opening having internally thereof flats for application of a wrench whereby to turn said pivot member about its central axis when assembling it with the stud, and the nut is slidably fitted over said enlargement.

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