March 23, 1965 L. M. BURT ETAL 3,174,727

RAILING SUPPORT MEANS

Filed Sept. 18, 1962

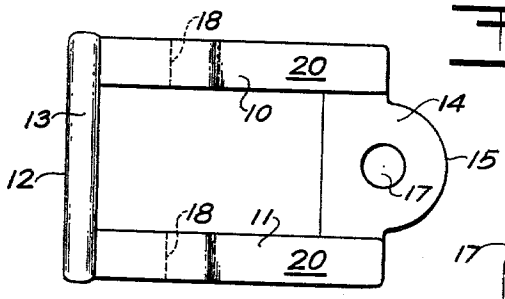


FIG. 1

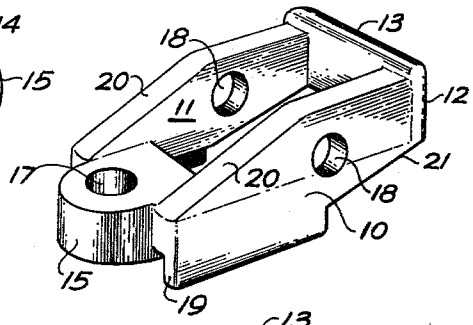


FIG. 4

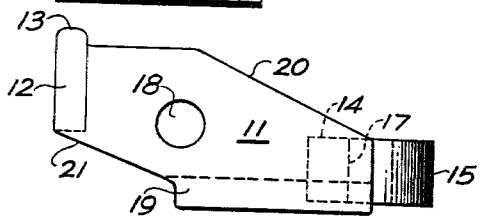


FIG. 2

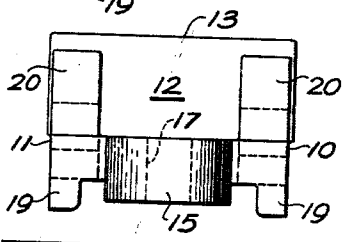


FIG. 3

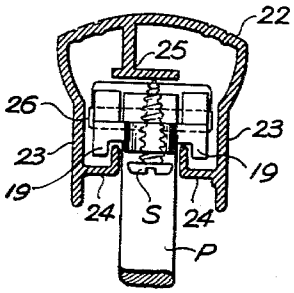


FIG. 5

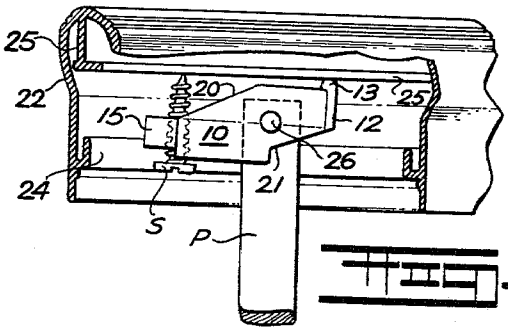


FIG. 6

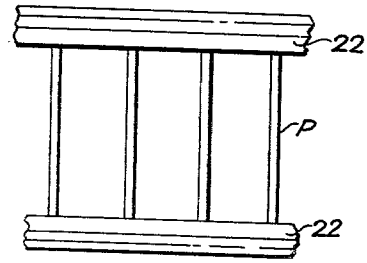


FIG. 7

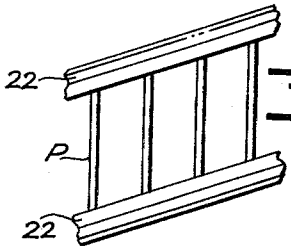


FIG. 8

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RAILING SUPPORT MEANS

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This invention relates to railings, balustrades, fences and the like and consists generally in an improved device for attaching balusters, posts and the like to railings.

The principal object of the invention is the provision of a device that may be positioned in a railing or a balustrade or similar object and pivoted to the top of a support baluster and actuated to lock said baluster to said railing.

A further object of the invention is the provision of a simple, inexpensive, easily formed device for attaching a railing or a balustrade to the end of a supporting baluster.

A still further object of the invention is the provision of a device for attaching a railing or balustrade to a baluster and which device may be die cast, molded or otherwise inexpensively mass produced.

A still further object of the invention is the provision of a railing or balustrade having an internal cross-sectional configuration adapted to provide opposed surfaces between which a tiltable member may be positioned and wedged by mechanical action so as to act as a means attaching a supporting baluster to said railing or balustrade.

A still further object of the invention is the provision of a railing or balustrade having a cross-sectional configuration including at least three parallel spaced surfaces and a member engageable between said parallel surfaces and tiltable relative thereto and attached in pivotal manner to a baluster so as to secure said baluster in said railing or balustrade.

The device for attaching a railing or balustrade to a baluster as disclosed herein comprises an improvement in the art relating to railings, balustrades, fences and the like and particularly the ornamental railings and balustrades as used in commercial constructions wherein hand rails and guard rails are positioned on the sides of stairways at the sides of balconies and on platforms to provide visual or physical obstacles or supports for the hands of persons using the stairs, balconies, etc. In the several constructions heretofore known in the art various means of securing the railings, balustrades and the like to supporting balusters have been proposed and such devices generally have been rather expensive to make, difficult to install, and usually incapable of being installed in the railing except at predetermined intervals or locations therealong.

The present invention relates to a simple and efficient device which may be pivotally attached to the end of a baluster engaged in a railing of suitable cross sectional formation and quickly wedged into position therein by actuating a metal screw or the like to provide a tilting wedging action to the member itself. The device is therefore capable of securing the post or baluster to the railing at any location therealong and at the same time being adapted to permit the baluster to be located at any desired angle relative to the railing or vice versa.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being the intention to cover all changes and modifications of the example of the invention herein chosen for purposes of the disclosure, which do not constitute departures from the spirit and scope of the invention.

The invention is illustrated in the accompanying drawing, wherein:

FIGURE 1 is a top plan view of the railing or balustrade mounting bracket.

FIGURE 2 is a side elevation thereof.

FIGURE 3 is an end elevation thereof.

FIGURE 4 is a perspective view thereof.

FIGURE 5 is a cross section of a railing or a balustrade showing a portion of a baluster and the attachment member in position securing the same together.

FIGURE 6 is a horizontal or side elevation with parts broken away and showing the attachment device in the railing as shown in FIGURE 5.

FIGURE 7 is a section of a railing and a plurality of balusters formed with the device disclosed herein.

FIGURE 8 is a section of railing wherein the rails are angularly disposed relative to horizontal and the balusters are vertically disposed and wherein the railing is formed with the device of the invention.

By referring to the drawings and FIGURE 1 in particular, it will be seen that in top plan view the attachment device comprises a substantially rectangular appearing member having a pair of spaced side walls **10** and **11**, an elevated end wall **12** with an upstanding transverse portion **13** and the opposite end wall comprising a horizontally disposed portion **14** having a longitudinally projecting section **15** apertured vertically as at **17**. The side walls **10** and **11** are also apertured transversely as at **18, 18** as may best be seen by referring to FIGURE 2 of the drawings. The side walls **10** and **11** have depending parallel rib-like sections **19, 19** as best seen in FIGURES 2, 3 and 4 of the drawings and the portions of the side walls **10** and **11** located between the portions thereof having the apertures **18, 18** therein and the end thereof closed by the cross member or relatively low wall section **14** are tapered downwardly thereto, the tapered sections being indicated by the numerals **20, 20**. The opposite or lower corner sections thereof which extend between the ends of the ribs **19** and the end wall **12** are also angularly disposed as indicated by the numerals **21, 21**. It will thus be seen that the particular device which makes the attachment of the railing to a support baluster possible is of a configuration that may be molded of plastic, die cast of metal, or otherwise inexpensively reproduced in quantity.

By referring now to FIGURES 5 and 6 of the drawings the device illustrated in FIGURES 1, 2, 3 and 4 and heretofore described may be seen in securing position in a railing or balustrade section and attached to a baluster. In FIGURE 5 a cross section of a railing **22** may be seen and it will be observed that the railing has depending side sections **23, 23** from each of which inturned and upturned flanges **24, 24** project to define a longitudinally extending slot spaced between the upturned portions of the flanges **24, 24**. The railing **22** also has a cross sectionally L-shaped depending member longitudinally thereof as generally indicated by the numeral **25** and which includes a horizontal portion spaced vertically relative to the flanges **24, 24** heretofore referred to. It will be seen that the space between the horizontal portion of the L-shaped member **25** of the railing **22** and the flanges **24, 24** thereof is sufficient to receive the device heretofore described and illustrated in FIGURES 1 through 4 and that when it is positioned therein the depending ribs **19, 19** in effect straddle the upturned ends of the flanges **24, 24** while the upwardly extending end **13** of the wall **12** lies closely adjacent the lower horizontal surface of the L-shaped portion of the railing **22**. A metal screw S of the self-tapping variety is engaged in the opening **17** in the device and when the same is rotated so as to move the same upwardly relative thereto the point of the metal screw S will engage the bottom of the L-shaped portion **25** of the railing **22**

as seen in FIGURES 5 and 6 and thereby tend to move this end **15** of the device downwardly. The device itself is pivoted to the end of a baluster P by a pivot pin **26** so that the net result of the motion is to wedge for upstanding end **13** against the bottom of the member **25** The device acts as a lever positioned over a fulcrum.

Those skilled in the art will observe that the relative position of the baluster P is a matter of choice and that the device operates to lock itself in position in the railing **22** by the tilting, wedging action imparted by the action of the metal screw S when the same is rotated inwardly or vertically upwardly as shown in FIGURES 5 and 6 of the drawings. By the same token the reverse rotation of the metal screw S will permit the device to move to unlock position and the baluster P may then be moved relative to the railing.

It will thus be seen that a railing such as shown in FIGURE 7 wherein there is an upper and lower rail and a plurality of balusters P therebetween may be formed by using a plurality of the devices one on each end of the balusters P or that the railing may be inclined at an angle as shown in FIGURE 8 of the drawings and will also be seen that any desired spacing may be arranged between the balusters P as it makes no difference to the operation of the device in attaching the same to the railing **22**. It will also occur to those skilled in the art that the exterior configuration of the railing **22** may take any desirable shape and need not necessarily be limited to that shown herein which is for the purposes of illustration only. If desired, a fillet section which is a simple channel-shaped member may be inserted between the flanges **24**, **24** of the railing, between each of the balusters P, in order to completely enclose the device and this is not otherwise described or illustrated herein as such has been a common practice in the metal railing industry as heretofore used to hide the screws or fasteners by which the balusters P were attached to devices which in turn were bolted or otherwise attached to the railings employed.

It will thus be seen that a relatively simply and inexpensive device has been disclosed which upon being pivotally attached to a baluster and engaged in a railing or balustrade of suitable configuration particularly the cross section including the details hereinbefore noted will enable the post or baluster to be secured tightly to the railing or balustrade section and that as many of such balusters may be used as required and that any angle of baluster relative to the angle or horizontal or vertical position of the railing may also be achieved.

It will thus be seen that the device for securing a railing to a baluster meeting the several objects of the invention has been disclosed and having thus described our invention, what we claim is:

1. Means for securing a baluster to a railing and comprising in combination a lever in the form of a generally rectangular body member having transversely apertured side walls, an elevated end wall on one end and a relatively lower transverse vertically apertured wall on the other end and a hollow railing having a pair of inturned and upturned horizontal spaced flanges and a longitudinal section spaced thereabove, said lever being positioned in said railing in straddling relation to said flanges and beneath said longitudinal extending section, a metal screw positioned through said vertically apertured lower end section for moving said lever relative to said longitudinal section of said railing, and a fulcrum comprising a pivot pin movably postioned through said transversely apertured side walls and through a baluster to be secured to said railing.

2. The means for securing a baluster to a railing as set forth in claim 1 and wherein the oppositely disposed upper and lower corners of the said side walls of said rectangular body member are oppositely inclined.

3. The means for securing a baluster to a railing set forth in claim 1 and wherein said side walls of said rectangular body member have depending spaced parallel longitudinally extending rib portions adapted to straddle said inturned and upturned flanges of said railing so as to engage the outermost sides thereof.

4. The device for attaching a baluster to a railing as set forth in claim 1 and wherein the upper end wall of said rectangular body member extends above the upper surfaces of the spaced apertured side walls thereof and is rounded transversely to form a member engagable against said longitudinal section in said railing.

5. The combination of a hollow railing having a longitudinally extending transversely positioned section therein and a pair of inturned and upturned flanges spaced therebelow and defining a longitudinal slot therebetween and a lever arranged for use as a clamping member disposed above said flanges and below said longitudinal section, said lever comprising a rectangular device having end walls and transversely apertured side walls, fulcrum means engaging a baluster to be secured to said railing and movably positioned in said apertures in said side walls, said apertures being substantially midway between the ends of said lever, one of said end walls of said lever being adjacent the uppermost surfaces of said side walls and having a transverse rib extending thereabove and the other of said end walls being positioned adjacent the lowermost portions of said side walls and extending forwardly thereof and having a vertical aperture therethrough and each of said apertured side walls having depending parallel ribs thereon, a metal screw positioned in said vertical aperture in said last-mentioned end wall and arranged to move said lever on said fulcrum means engaging said baluster to wedge said transverse rib on said upper end wall against said longitudinal section in said railing so as to secure said device and said baluster thereto when said screw engages said longitudinal section.

6. A device for use in clamping a baluster to a hollow balustrade and comprising a rectangular device having an open center with spaced side walls, apertured approximately midway between their ends, a first end member joining the adjacent ends of said side walls and extending above said side walls, a second end member joining the other ends of said side walls, said second end member being of lesser height than said side walls and apertured vertically, a pin positioned in said apertures for engaging said baluster, a rotatable member threaded in said vertical aperture in said second end member and arranged to engage said hollow balustrade and move said device in a tilting motion on said pin.

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