

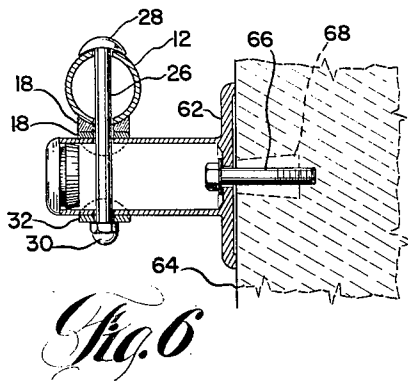
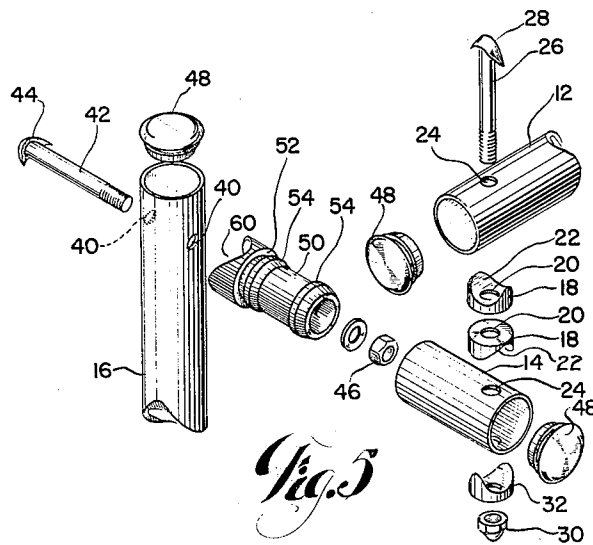
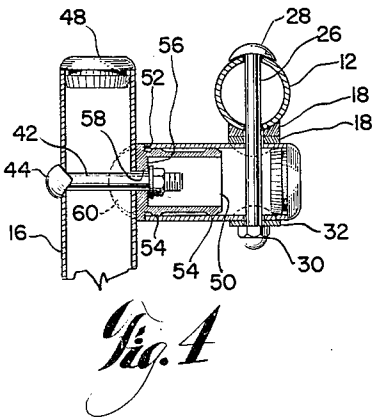
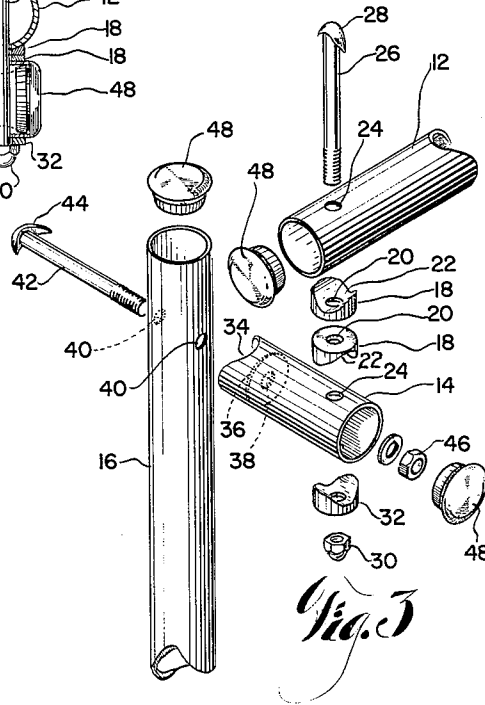
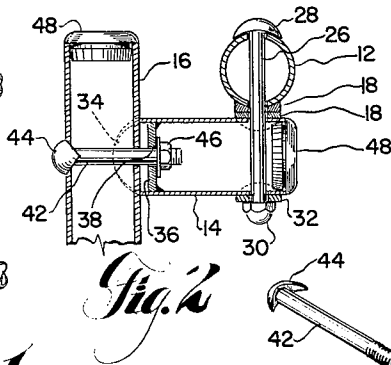
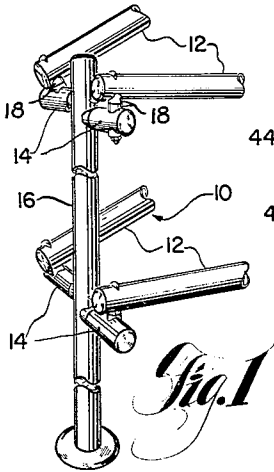
Sept. 12, 1961

J. H. BLAYDEN

2,999,671

HANDRAIL CONNECTION

Filed March 17, 1959



INVENTOR.
JAMES H. BLAYDEN
BY *Richard J. Safar*
ATTORNEY

1

2,999,671

HANDRAIL CONNECTION

James H. Blayden, Pittsburgh, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 17, 1959, Ser. No. 799,882

3 Claims. (Cl. 256—65)

This invention relates to railing structures which may be utilized in connection with staircases, ramps, fire escapes, balconies and the like, and more particularly to devices of this type which are adapted to be readily assembled and set in place for use.

It is an object of the invention to provide a device of this type that is capable of diversified application, and that may be rigidly assembled on location with a minimum expenditure of time and labor.

It is another object of the invention to provide a railing device of the above type which permits a fine degree of angular adjustments during installation.

It is still a further object to provide an angularly adjustable coupling structure which permits a sturdy and secure joint between the members to be coupled.

These together with other objects and advantages of the invention will best be understood by referring to the following detailed specification and preferred embodiments thereof, and to the accompanying drawings, in which:

FIG. 1 is a perspective view of a portion of a railing embodying my invention;

FIG. 2 is a longitudinal sectional view showing in detail the rail connection;

FIG. 3 is an exploded perspective view of FIG. 2;

FIG. 4 is a longitudinal sectional view showing the rail connection and post adapter;

FIG. 5 is an exploded perspective view of FIG. 4; and

FIG. 6 is a longitudinal sectional view showing the rail connection adapted for wall bracket assembly.

In general, my improved railing device comprises a rail member spaced relatively to a supporting structure by means of a short spacing member extending therefrom. Said rail and spacing members preferably are of substantially cylindrical or tubular configuration and made from standard stock of uniform diameter. However, these members may be of any desired cross-section or form, such as elliptical or quadrangular, and may be selected in the form of bar or rod.

A pair of saddle members having substantially centrally located apertures are interposed between said rail and spacing members. Said saddles are provided with flat mating surfaces and opposed recesses conforming to the contour of the surfaces of the adjacent members. The required apertures are located and drilled in the rail and spacing members where jointure occurs, and assemblage or coupling is achieved by means of a connecting element or bolt passed through the aligned apertures of the saddles and adjacent members. The respective parts are drawn into intimate engagement, the saddle members thus being in surface engagement with juxtaposed surfaces of adjacent members to be coupled. Accordingly, the saddles thereby provide not only a secure and sturdy coupling, but also one pleasing in appearance. Moreover, the saddle members having flat bearing surfaces in planar abutting relationship permits the rail to be rotated angularly with respect to the spacing member thus allowing angular adjustment of the rail during installation.

Referring to the drawings wherein like reference numerals designate similar parts throughout the various views, and particularly to FIGS. 1 through 3 which relate to one embodiment of my invention for a handrailing for a staircase, 10 designates generally a railing system comprising substantially tubular rails 12 and spacing members 14, of desired dimensions, and including a vertical support such

2

as, for example, spaced vertical posts 16 only one of which is shown. Said posts may be mounted in any suitable manner to the floor surface or stair. Rails 12 are spaced relatively to said vertical posts 16 by means of said spacer 14 which consists of a short tubular member extending laterally from said vertical post to which it is secured.

As clearly shown in FIGS. 2 and 3, a pair of plano-concave saddles 18 is adapted to be interposed between the tubular rail and spacing member. Each saddle is provided with a centrally disposed aperture or hole 20. The concave recess 22 of one saddle is adapted to correspond to the contour of the surface of the spacing member, and similarly the concave recess 22 of the second saddle conforms to the curvature of the rail. The saddles are interposed between the rail and spacing members, the flat surfaces of said saddles mating and the concave recess of each saddle embracing the surface of the respective adjacent tubular member. Apertures or holes 24 are located and drilled diametrically through the tubular members where jointure occurs. A threaded attaching bolt 26 with a head 28 extends through aligned apertures 20 and 24 and into threaded engagement with nut 30. A washer 32 may be provided to form the seat for the nut 30. By drawing up tightly on the nut 30, the tubular members having interposed saddles are drawn into intimate engagement, opposed recesses of said saddles thereby forming a secure and sturdy joint. It will be observed that because of the bearing engagement formed between the flat mating surfaces of said saddle members, the rail may be angularly adjusted with reference to the spacing member to any desired position. That is, said mating surfaces permit free rotative adjustment of the rail to any desired angle.

In those cases providing vertical posts as supporting members, one end of said spacer may be provided with a curved recess 34 conforming to the contour of the external surface of the vertical post to engage snugly that surface when in abutting relation. Said spacer further is provided with a transverse, internal wall 36 having a centrally disposed aperture or hole 38. Diametrically disposed apertures or openings 40 are located and drilled in the vertical post at the jointure between said post and spacer. A threaded bolt 42 having a head 44 is designed to extend through aligned apertures 38 and 40 and into threaded engagement with nut 46 thereby securing the parts in assembled relation. End caps 48 may be employed as suitable closures for the ends of rail and spacing members, and may be secured in place by any well-known means, preferably a press-fit means.

As a modification (FIGS. 4 and 5), it may be desirable to employ a post adapter 50 for greater versatility. Said post adapter is preferably provided in the form of a tubular member with a reduced portion having a shoulder 52, ribs 54 and a transverse, internal wall 56 having a centrally located aperture 58. Said tubular spacing member 14 thus may be a press fit over the reduced portion of the adapter into abutment against the shoulder 52, ribs 54 snugly engaging the internal walls of said spacing member. The opposite end of the post adapter, exteriorly exposed in respect to the spacer 14, is provided with a curved recess 60 conforming to the external contour of the vertical post, and the parts may be assembled by means of a connecting bolt such as described above.

In the wall bracket assembly, such as shown in FIG. 6, the spacing member may be provided with a flanged end portion 62. The flanged end embraces a supporting wall 64 for the same, and is secured in place by any desirable means such, for example, by threaded attaching bolt 66 engaging expansion sleeve 68 embedded in the supporting wall 64. It is to be understood that the vertical wall for supporting said spacer may be of any suitable material, and that the spacer may be secured in place accordingly.

Having thus described my invention generally and in terms of specific embodiments, I claim:

1. In a railing connection, the combination comprising a rail member and a spacing member in juxtaposed relationship, a pair of saddle members interposed the rail and spacing members, said saddle members having flat terminal end mating surfaces contacting each other and an end of each opposite thereto in contact one each with the rail member and the spacing member adjacent thereto, an interconnecting element extending axially through the rail, spacing and saddle members, said interconnecting element having its axis disposed normal to the plane of the flat mating surfaces of the saddle members, and means securing the interconnecting element to rigidly unit the rail, spacing and saddle members in desired angular adjustment of the rail and spacing members about the axis of the interconnecting element.

2. The railing connection defined in claim 1 in which the ends of the saddle members opposite their flat terminal end mating surfaces are each recessed to conform with the exterior surface of the rail member and the spacing member adjacent thereto and in contact therewith.

3. The railing connection defined in claim 1 in which the interconnecting element is a bolt having an exteriorly exposed head at one end and threaded at its opposite end to receive an exteriorly exposed nut.

References Cited in the file of this patent

UNITED STATES PATENTS

2,834,621	Schroer	May 13, 1958
2,876,027	Sulmonetti	Mar. 3, 1959

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 2,999,671

September 12, 1961

James H. Blayden

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 3, line 14, for "unit" read -- unite --.

Signed and sealed this 13th day of February 1962.

(SEAL)

Attest:

ERNEST W. SWIDER

Attesting Officer

DAVID L. LADD

Commissioner of Patents