

Sept. 8, 1925.

1,552,569

J. SCHURMAN

ANCHORING DEVICE FOR STAIR RAILS

Filed Jan. 7, 1922

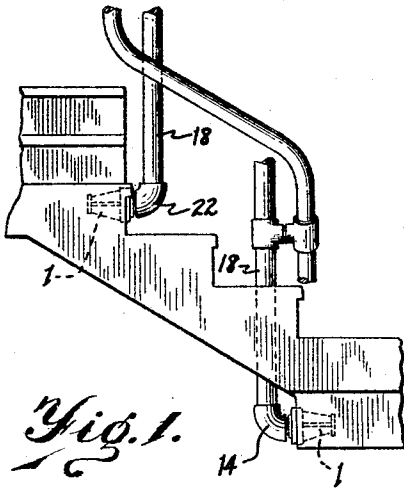


Fig. 1.

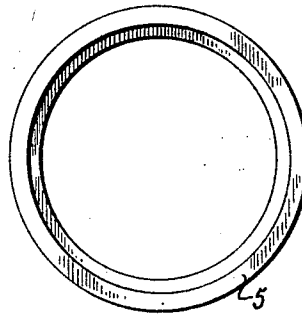


Fig. 5.

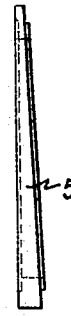


Fig. 6.

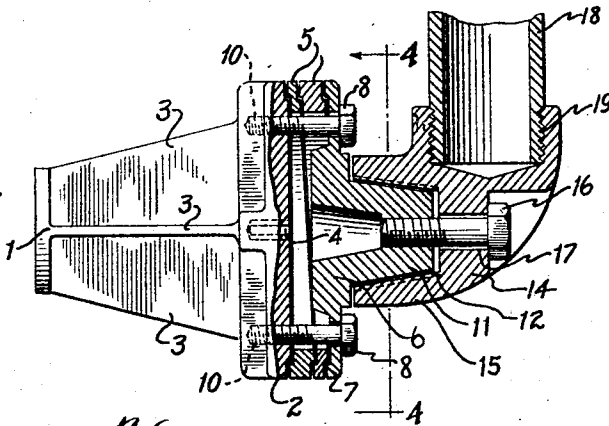


Fig. 2.

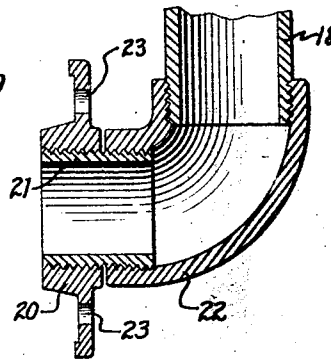


Fig. 3.

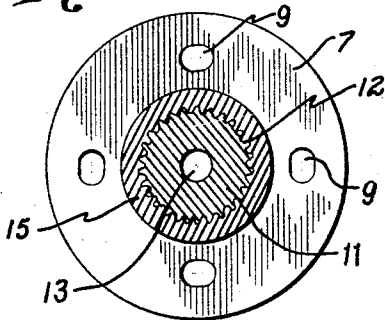


Fig. 4.

INVENTOR.
John Schurman.
BY
Charles E. Wiener
ATTORNEY.

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UNITED STATES PATENT OFFICE.

JOHN SCHURMAN, OF HIGHLAND PARK, MICHIGAN.

ANCHORING DEVICE FOR STAIR RAILS.

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To all whom it may concern:

Be it known that I, JOHN SCHURMAN, a citizen of the United States, residing at Highland Park, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Anchoring Devices for Stair Rails, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to anchoring devices for hand rails and the like and the object of the invention is to provide a device of the character described comprising a base adapted to be set in concrete to provide a support for a hand rail. Another object of the invention is to provide a means for truing up the hand rail uprights after the bases have been set in the concrete so that the said uprights may be adjusted in two vertical planes and secured in the true vertical position. Another object of the invention is to provide an anchoring device for a hand rail which when properly assembled prevents the uprights of the rail from moving in any direction. A still further object of the invention is to provide a means for centering the base within the mold during pouring of the concrete so that the base is held in position while the concrete is hardening. These objects and the several novel features of the invention are hereinafter more fully described and claimed and the preferred form of construction by which these objects are attained is shown in the accompanying drawings in which—

Fig. 1 is a view of a stair with my anchoring device mounted therein.

Fig. 2 is a section through the device.

Fig. 3 is a section through an alternative form of the device.

Fig. 4 is a section taken on line 4—4 of Fig. 2.

Fig. 5 is a face view of one of the tapered rings for adjusting the device.

Fig. 6 is an edge view thereof.

As shown in Fig. 2 a base 1 is provided which is adapted to be set in the concrete and the base 1 is provided with a circular face 2 adapted to extend flush with the concrete. The base 1 is provided with a series of fins 3 which are adapted to be embedded in the concrete and prevent removal of the base

from the concrete. A small hole 4 is provided in the center of the face 2 of the base 1 and when the mold for the stairs is made up the centers for the bases are marked on the mold boards and a nail is driven through the board at the marked points and into the hole 4 so that the base is correctly centered in the mold. With the base thus secured in the mold the concrete is poured and when the concrete is hardened the mold boards are removed thus withdrawing the nail from the aperture 4 and leaving the base embedded in the concrete. To secure the rail to the base a pair of tapered rings 5 are mounted on the face 2 of the base and the said rings are grooved so as to engage over one another and over the base 1. A member 6 is provided having an annular flange 7 adapted to engage over the outer ring 5 and a series of four bolts 8 are provided adapted to be passed through apertures 9 provided in the flange 5 as shown in Fig. 4, and are threaded into threaded apertures 10 provided therefor in the base 1. The member 6 is provided with a protruding tapered portion 11 which is provided with longitudinal corrugations 12 about the periphery as shown in Fig. 4 and is provided with a threaded aperture 13 in the center. A member 14 is provided having a recessed end 15 which is internally corrugated and adapted to fit over the corrugations 12 of the member 11 as shown in Fig. 4. A bolt 16 is provided for securing the members 11 and 14 together and extends through an enlarged aperture 17 and is threaded into the part 11 as shown so that the said portions may be drawn up tightly, the aperture 17 being greater in diameter than the shank of the bolt to allow the corrugated portions to center correctly. An upright 18 is threaded into a threaded recess 19 provided in the member 14 and this upright 18 extends upwardly and supports the hand rail with which it is to be used.

During the hardening of the concrete the bases 1 will sometimes take a position so that the face 2 thereof is not truly vertical. For this reason the tapered rings 5 are provided so that the upright may be adjusted to the true vertical position. Before the rails have been secured to the upright 18 the device is assembled as shown in Fig. 2 but the bolts 8 are not drawn up tightly. At this time by turning the rings 5 in relation one to the other the

thin parts of the rings may be brought to one side and the thicker parts of the rings may be brought to the other side to allow considerable range of adjustment. The rings 5 may be thus turned around until the upright 18 is brought to the vertical position in a plane longitudinally through the device at which time the bolts 8 may be turned up tightly to secure the parts in place. The upright 18 may be also adjusted in a plane parallel to the face 2 of the base 1. This is accomplished by removing the bolts 16 and slipping the member 14 off of the member 11 and again positioning the same on the member 11 as shown in Fig. 4 until the upright 18 is in the vertical position or as near the vertical position as possible. It will be noted that the apertures 9 are slightly elongated the object being that should the upright 18 be not quite vertical when positioned on the corrugated member 11, the bolts 8 may be loosened and the members 11 and 14 turned as a unit to bring the upright to the vertical position, at which time the bolts 8 may be again tightened. This allows adjustment of the upright 18 in two planes so that the upright may be brought to an absolutely vertical position. By this construction the upright 18 is supported very rigidly and at the same time may be adjusted as desired. An alternative form of support which is adapted to be secured to the base is shown in Fig. 3. This construction is used where an absolutely rigid support is not necessary. In this case a member 20 is provided which is adapted to be secured to the base 1 by the bolts 8 in identically the same manner as the member 11 is secured thereto in Fig. 2, the rings 5 being utilized as before for vertical adjustment. The member 20 is threaded on the interior and a nipple 21 is threaded thereinto, the said nipple providing an extending threaded end onto which an elbow 22 may be threaded. The elbow 22 is threaded internally at the upper end and the upright 18 is threaded into the said elbow. With this form of device the adjustment by the rings 5 is accomplished in the same manner as with the device shown in Fig. 2. In this case, however, the apertures 23 in the member 20 are perfectly round and are not elongated like the apertures 9 shown in Fig. 4 so that the said member 20 cannot move on the bolts 8. The vertical adjustment of the member 18 in a plane parallel to the member 20 is accomplished by turning the upright 18 to the vertical position which threads the elbow 22 on the nipple and allows a very fine adjustment of the upright. While this form of the device is not as rigid as that shown in Fig. 2 it is much cheaper to manufacture and is sufficiently rigid to be used for all ordinary purposes.

From the foregoing description it be-

comes evident that the device is very simple and efficient in operation, will not easily get out of order, may be easily adjusted in two planes, is very rigid, and provides a device which accomplishes the objects described.

Having thus fully described my invention, its utility and mode of operation, what I claim and desire to secure by Letters Patent of the United States is—

1. In an anchoring device for hand rails, a base adapted to be embedded in concrete and provided with means for holding the same in position in a concrete mold, the said base being provided with a flat face extending flush with the face of the concrete, a pair of rings of greater thickness on one side than on the other mounted in rotatable relation on the face of the base, a member secured to the base and being adjustable in a vertical plane by relative rotation of the said rings, the said member being provided with an outwardly extending longitudinally corrugated boss, a second member having a corrugated recess fitting over the corrugations of the boss, adjustable means for securing the members in assembled relation, and an upright rail support carried by the said second member.

2. In an anchoring device for hand rails, a base adapted to be embedded in concrete and having a flat face, a pair of rings tapering in thickness from one side to the other mounted in rotatable relation on the face of the base, a member secured to the base and engaging the said rings, the said member being provided with an outwardly extending corrugated boss, a second member having a corrugated recess fitting over the corrugations of the boss, means for securing the members in assembled relation, and an upright rail support carried by the said second member.

3. In an anchoring device for hand rails, a base adapted to be embedded in concrete and having a flat face, a pair of rings of greater thickness on one side than on the other mounted in rotatable relation on the face of the base, a member secured to the base and supported on the said rings, an upright rail support carried by the said member, the said rings providing a means for adjusting the upright rail support in one vertical plane, and means for adjusting the upright rail support in a vertical plane at a right angle to the first plane.

4. In an anchoring device for hand rails, a base adapted to be embedded in concrete or the like, a pair of rings each of greater thickness on one side than the other and rotatably mounted on the face of the base, a member bolted to the base engaging the said rings, a rail socket secured to the said member, means being provided permitting adjustment of the socket in a plane at a right angle to the axis of the rings.

5. In an anchoring device for hand rails for concrete structures, a base adapted to be embedded in the concrete with the face thereof substantially flush with the surface of the concrete, a pair of rings tapering in thickness from one side to the other and mounted in rotatable relation on the face of the base, the said base and rings having the faces shaped to provide annular shoulders preventing lateral displacement of the parts when assembled, a member secured to the base and against the said rings, and a rail socket secured to the said member and adjustable in a plane at a right angle to the axis of the member.

In testimony whereof, I sign this specification.

JOHN SCHURMAN.