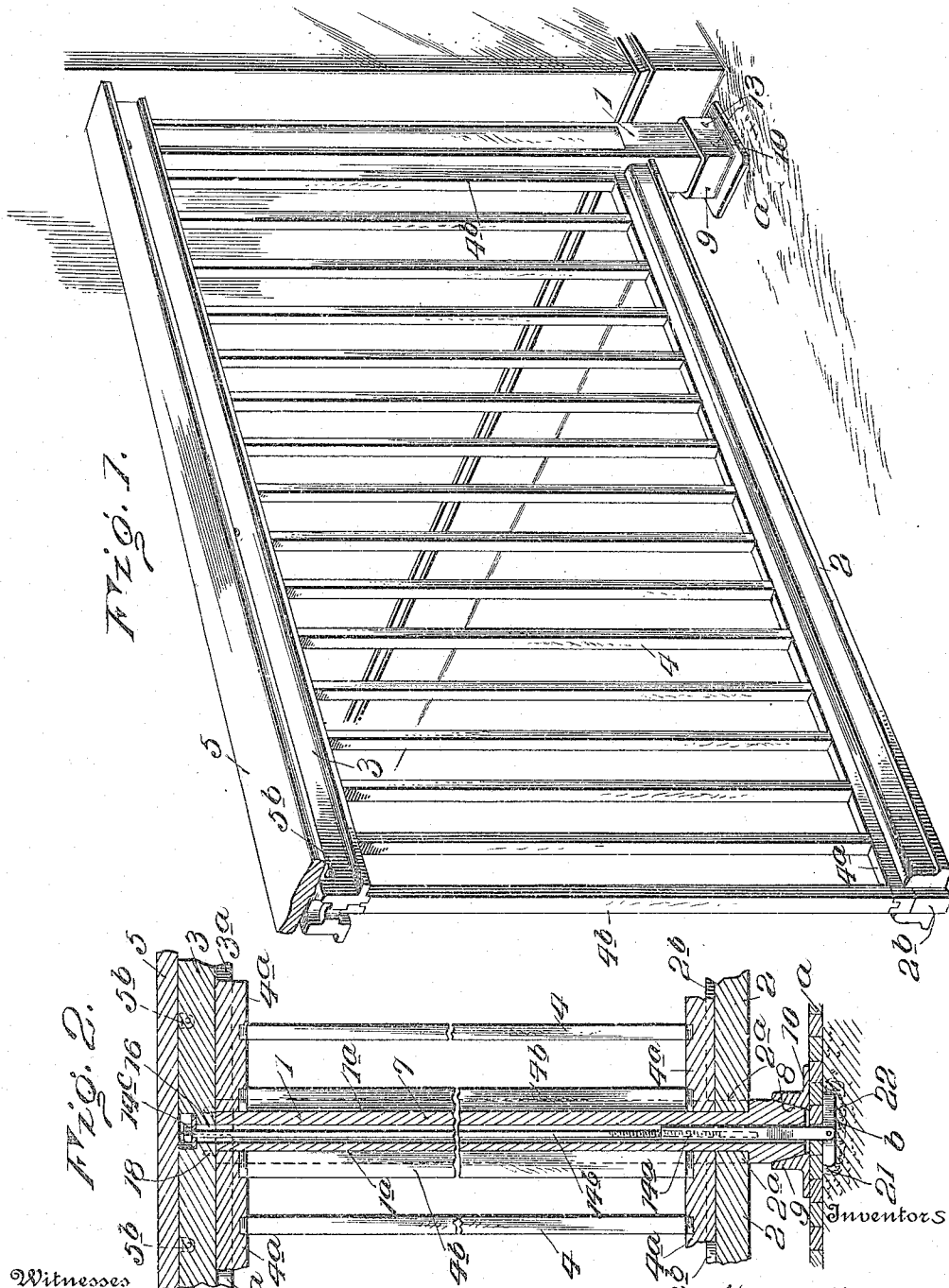


H. KLEIN & L. J. MEAD.
 POST FOR OFFICE RAILINGS AND THE LIKE.
 APPLICATION FILED NOV. 20, 1913.

1,135,817.

Patented Apr. 13, 1915.
 4 SHEETS—SHEET 1.



Witnesses
W. A. Williams
Allen E. Beck

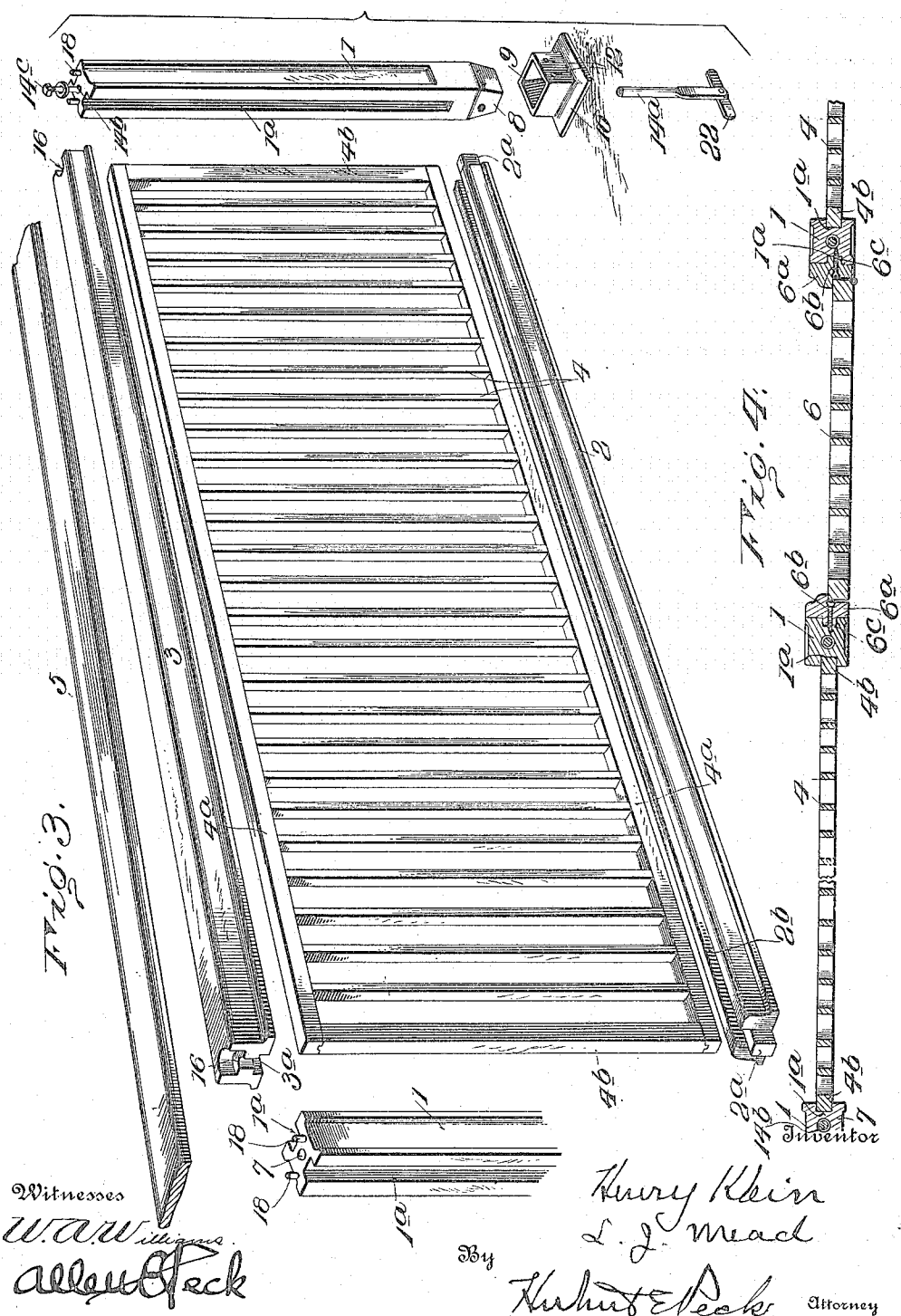
By

Henry Klein
L. J. Mead
Hubert E. Beck Attorney

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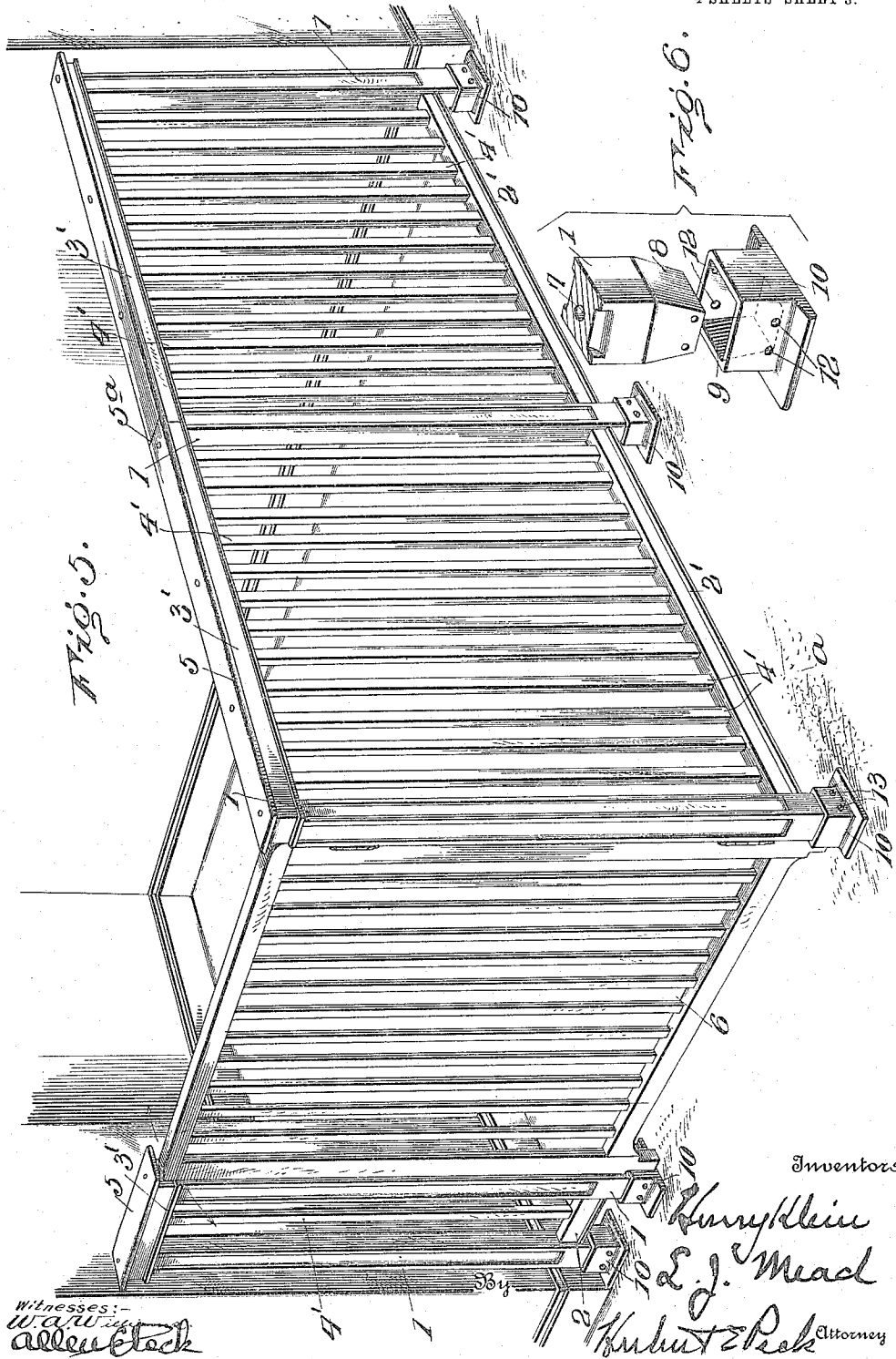


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Witnesses:
 W. A. W. Allen & Co.

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H. Klein

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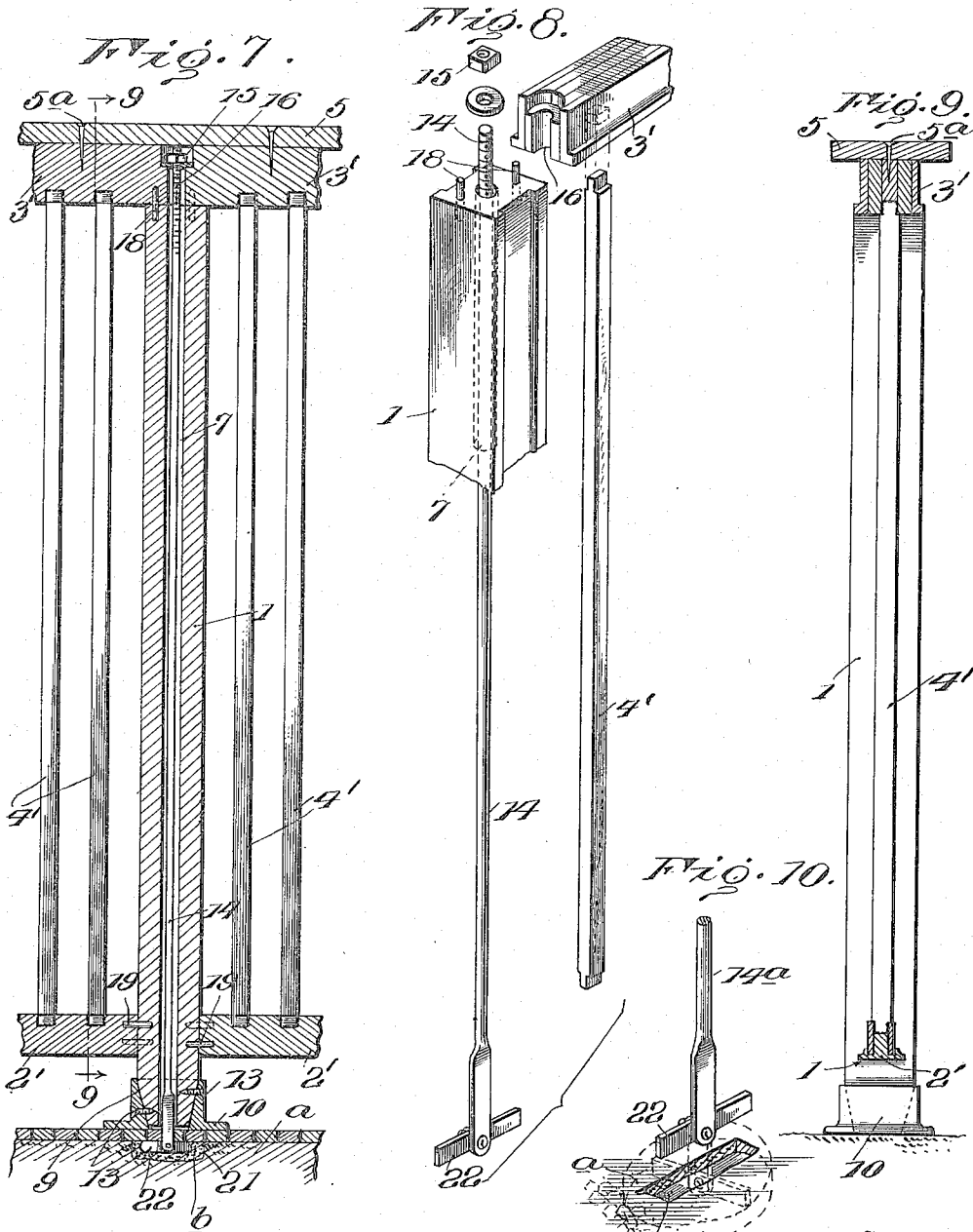
Hunt & Peck Attorney

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Harry Klein
L. J. Mead
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UNITED STATES PATENT OFFICE.

HENRY KLEIN, OF NEW YORK, N. Y., AND LAWRENCE J. MEAD, OF DARIEN, CONNECTICUT; SAID MEAD ASSIGNOR TO SAID KLEIN.

POST FOR OFFICE-RAILINGS AND THE LIKE.

1,135,817.

Specification of Letters Patent.

Patented Apr. 13, 1915.

Application filed November 20, 1913. Serial No. 802,097.

To all whom it may concern:

Be it known that we, HENRY KLEIN, a subject of the Emperor of Germany, and resident of New York, N. Y., and LAWRENCE J. MEAD, citizen of the United States, residing at Darien, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Posts for Office-Railings and the Like, of which the following is a specification.

This invention relates to certain improvements in railings for offices and the like; and the objects and nature of the invention will be readily understood by those skilled in the art in the light of the following explanation of the accompanying drawings illustrating what we now believe to be the preferred embodiments or mechanical expressions from among other formations, arrangements and constructions within the spirit and scope of the invention.

An object of the invention is to provide an improved railing for use within buildings such as in offices or the like, and which can be fixedly and rigidly secured without requiring exterior securing braces between the floor and railing posts and without necessitating fastenings or securing means between the railing and the wall nor accurate fitting of the railing to the wall.

A further object of the invention is to provide improvements in office railings and the like whereby the railing posts can be rigidly secured to the floor and can carry the rails without additional fixtures or securing means.

A further object of the invention is to provide improvements in office railings, whereby the parts or units making up complete railings can be kept in stock and can be easily and readily assembled at the places where the railings are to be erected.

A further object of the invention is to provide certain improvements in office railings and the like, whereby such railings will be composed of interchangeable sections or units that can be kept in stock and can be readily and economically assembled and set up, and can be as readily taken down for moving or alteration without serious damage or injury to the various sections and units employed.

A further object of the invention is to produce a knock down sectional railing, or

the like, for use in buildings embodying sections that can be readily assembled and set up and that can be also readily separated and taken down for again assembling.

The invention consists in certain novel features of construction and in combinations and arrangements as more fully and particularly set forth and specified hereinafter.

Referring to the accompanying drawings;—Figure 1, is a perspective view of a portion of a railing built in accordance with this invention, parts thereof being shown in section. Fig. 2, is a vertical longitudinal sectional view of a portion of the set up railing. Fig. 3, is a perspective view showing various sections or units of the railing separated. Fig. 4, is a horizontal section through a portion of the railing including a gate and gate posts. Fig. 5, is a perspective of a railing differing somewhat in structure from that illustrated by the preceding views of the drawings. Fig. 6, is a detail perspective of the lower end of one of the gate posts and its shoe or base of Fig. 5. Fig. 7, is a vertical longitudinal section through a portion of the railing of Fig. 5. Fig. 8, is a detail perspective of certain parts of the railing of Fig. 5. Fig. 9, is a vertical cross section on the line 9—9, Fig. 7. Fig. 10, is a detail perspective showing the socket formed in the floor and the lower end of the tie rod or bolt and its anchor separated from the floor, dotted lines showing the anchor in the socket.

The present invention preferably comprises series of sets of similar interchangeable railing units or sections that can be made up in quantities and kept in stock so that the necessary units will be always on hand for filing orders for railings. These units are so constructed that they can be readily assembled and set up to form a complete railing and can be as readily separated without injury when the railing is to be removed or remodeled. This railing comprises similar interchangeable posts 1, and means for clamping the same to the floor, similar interchangeable individually-complete panel sections; and top and bottom rails for connecting the posts. Each post 1, is formed with longitudinal grooves 1^a, extending approximately throughout the lengths of its opposite edges. A series of

similar interchangeable bottom rails 2, is provided to connect together the lower end portions of the posts. Each bottom rail has end tenons 2^a, to enter and removably fit in the grooves 1^a, of adjacent posts, and is also formed with a longitudinal groove 2^b, extending throughout the length of its upper edge. A series of similar preferably interchangeable top rails 3, is also provided to removably connect the upper ends of the posts, and each rail 3, is formed with a groove 3^a, extending approximately throughout the length of its bottom edges. A series of similar interchangeable panel or filling sections is also provided to fill the spaces between the posts and the top and bottom rails 3, 2. In the example illustrated, each panel section consists of spindles 4, top and bottom bars 4^a, to which the ends of the spindles are permanently or fixedly secured; and end stiles or uprights 4^b, fixedly secured to the ends of the top and bottom bars 4^a. The bars 4^a, of a panel, are adapted to removably fit in the grooves 2^b, and 3^a, of rails 2 and 3, connecting a pair of posts and the end uprights 4^b, are adapted to removably fit in the adjacent edge of grooves 1^a, of said posts.

Inasmuch as a railing usually includes a gate, for instance, a gate 6, and gate posts are hence required, means are provided whereby posts 1, can be converted into gate posts and thereby avoid the necessity of making special gate posts. To accomplish this result, posts 1, are set up in position to receive the gate 6, and longitudinal strips 6^a, are removably secured to the adjacent edges of said posts by screws 6^b, to receive the gate hinges and to form the gate stop. These strips are usually similar in construction and each has a tongue 6^c, to fit the groove of a post and at its opposite edge has a longitudinal rabbeted portion to receive the gate. The gate is hinged to the strip of one post and its free end closes against the strip of the other post. These strips can be readily removed from the posts by removing the screws so that a panel section and upper and lower rails can be substituted for the gate should it become necessary to alter or remodel a railing.

Devices are provided for setting up the posts and clamping the same to the floor and these devices are interchangeable and adapted to any one of the posts and can be manufactured in quantities and kept in stock.

Each post is rigid and strong in construction and is formed longitudinally hollow or with a bore or passage 7, extending centrally and longitudinally therethrough. The lower end of the post is preferably longitudinally tapered or reduced downwardly, see 8, to wedge and fit tightly in the vertical socket 9, of a shoe, foot, or base 10. Each shoe is formed of metal, preferably a single casting, with a suitable enlarged flat flanged base to

rest on the floor. The upwardly extended vertically hollow socket of the shoe is open at the lower end through the bottom of the shoe and is preferably formed with downwardly converging interior walls to form a downwardly contracting or tapered socket to receive the tapered lower end of the post. The post when driven or forced into the socket will become tightly wedged and locked therein to prevent lateral play of the post in the socket. The shoe is preferably formed with several holes 12, extending through the opposite side walls of its socket to permit the passage of wood screw 13, for fastening the post in the socket, and usually the holes at one side of the socket are at a different elevation from those at the opposite side.

Each post with its shoe, is rigidly held in vertical position and is removably clamped to the floor by a strong approximately stiff or rigid metal coupling, tie rod or bolt at its lower end fixed and anchored in the floor *a*, and extending upwardly therefrom through the shoe and throughout the length of the longitudinal passage or bore of the post and at its upper end preferably projecting a distance above the post and provided with a suitable means to hold the post to the floor and certain railing parts together. In the particular examples illustrated, the horizontal top rails traverse the upper ends of the posts and removably rest thereon and are formed with transverse vertical holes 16, registering with the bores 7, of the posts, and the tie rods or members fixed to the floor, extend upwardly through said holes 16. The upper end portions of the vertical holes 16 are preferably countersunk or enlarged to receive the clamping means carried by said rods, so that the upper ends of said bolts do not extend above the top surfaces of said top rails and said clamping means are countersunk or arranged within said rails. The clamping means and tie rods hence rigidly clamp the top rails down on the top ends of the posts and also rigidly clamp the post shoes against the floor while said bolts hold the posts and their shoes against lateral or horizontal movement on the floor. However, as at present advised, by experience, we do not wish to limit all features of the invention to a structure wherein the top rails rest on the posts and are secured by said bolts. We preferably provide vertical dowel pins 18, between the upper ends of the posts and said top rails and removably entering said parts to center the rails on the posts and to serve as additional securing means between said elements.

Where a top rail 3, is not of a length to extend the full distance from a wall to a gate post, or where said rail lengths are provided to extend only from post to post, or approximately the distance between posts, it

is of advantage to so arrange the parts that the ends of the rail lengths meet above a post so that said ends will rest on and be upheld and braced by the post. The ends of the meeting rails are each formed with a half groove so that when the rail ends meet the complete hole 16, for the tie rod and clamping nut and washer will be provided. The clamping means will then overlie both rail ends and clamp them down on the post end. The rail lengths 3, at the gate posts and walls extend completely across the posts as is apparent from Fig. 5.

Top boards, strips, or pieces 5, are preferably arranged horizontally and longitudinally on the top face of the rails 3, and are suitably secured thereto preferably extending throughout the lengths thereof to cover the holes 16, and to form a desirable top finish for the railing.

The top strips 5, preferably are continuous across the meeting ends of the rails 3, as indicated in Fig. 5, whereby certain advantages are attained. These strips 5, can be secured by nails or screws 5^a, or in any other suitable manner. For instance, the strips can be secured to the top rails by small concealed angle brackets 5^b, if so desired, to avoid possibility of marring or injury to the strips where composed of expensive hard woods.

Various means can be employed for removably clamping the railing to the floor embodying members anchored to the floor and extending through the longitudinal passages of the posts so that the posts removably fit thereon and having screw threaded adjusting means whereby the posts can be clamped tightly against and held to the floor. In certain figures of the drawings, each coupling means is shown as consisting of a member 14^a at its lower end adapted to be fixed in the floor and at its upper end having an internally threaded longitudinal socket, and a member 14^b, having a threaded lower end entering and longitudinally adjustable in said socket and at its upper end having a clamping head 14^c, formed to receive a wrench or other instrument whereby the member can be rotated to screw the same into or from the socket of the member 14^a. These members constitute a tie rod or bolt extending removably through the post and through the top rails 3, and whereby these parts can be clamped together and to the floor as will be readily understood. The member 14^b, is removable so that the railing can be knocked down when desired. In other figures of the drawings, the coupling means for removably fastening the railing to the floor consists of tie bolts or rods 14 at their lower ends fixed in the floor and provided with screw threaded upper ends to receive clamping nuts 15, and suitable washers. The rods or bolts 14 extend throughout the

length of the posts and through the rails 3, as hereinbefore described.

Various methods can be followed in fixing the coupling or tie rods or members to or in the floor where the railing is to be set up. As at present advised by experience, we prefer to provide the lower ends of the tie rods or members with transversely arranged projecting heads or anchors 22 at their central portions fixed to the lower ends of the rods, and to form holes or cavities in the floor at the points where the posts are to be located and to insert the lower ends of the rods thereinto with the anchors caught under portions of the floor so as to resist upward movement of the rod when the screw threaded adjusting means is tightened and thereby clamp the post shoe against the top surface of the floor over said hole and against said portion of the floor resisting upward movement of the anchor. Where a railing is to be set up on a concrete or like floor, elongated holes are cut through the floor surface at the points where the posts are to be located and enlarged undercut sockets or cavities 21, are formed of the necessary depth below said holes. When the cavity has been excavated to the desired depth and width, the lower end of the tie rod and its anchor are inserted through the elongated hole and into the cavity and the rod is then turned on its vertical axis to project the anchor into the undercut portions of the cavity. The cavity is then filled with cement, grouting or concrete 6, around the anchor and lower end of the rod so as to embed the same within the floor and thereby rigidly anchor and fix the rod. The tile or other floor surface can then be restored over the cavity if desired, although it is intended that the base of the post shoe will cover and conceal the floor surface where disturbed in excavating the cavity.

If so desired, the lower ends of the coupling or tie rods can be flattened and the anchors can be formed of flattened bars or metal plates arranged on edge and secured against the vertical flat side faces of the lower ends of the rods. Usually these anchors are arranged parallel with the length of the railing so that their wide flat side faces will afford the greatest possible resistance against lateral play of the posts and to resist lateral stresses on the posts.

In the construction illustrated by Figs. 5, 7, 8, and 9, the individually complete panel sections or units are not employed but the bottom rails 2' are secured to the lower ends of the posts in any suitable manner as by dowel pins 19, and said rails 2' and the top rails 3' have the spindles 4' directly fitted therein and secured thereto, and said rails 2', 3', are in this form usually not provided with the longitudinal groove but have mortises to receive tenons on the ends of the

spindles, although otherwise the construction and arrangement of the upper rails 3' is the same as that of the rails 3.

The shoes for posts that are designed to constitute gate posts preferably have their bases reduced in length so as not to interfere with gate openings or passage ways between gate posts, see Figs. 5 and 6.

It is evident that various changes, modifications, and variations might be resorted to in the forms, constructions and arrangements described without departing from the spirit and scope of my invention and hence we do not wish to limit ourselves to the exact disclosure hereof.

What we claim is;—

1. A railing comprising posts, rising from and abutting a floor, said floor having undercut cavities formed therein, rods rising from the floor and receiving said posts and embodying means for forcing said posts downwardly to clamp the same to the floor, each rod at its lower end having a transversely arranged anchor in said cavity and projecting into the undercut portions thereof and embedded and locked therein by a filling of cement or the like.

2. An office railing, or the like, comprising a post, at its lower end resting on the floor, a rod rising from the floor and extending longitudinally of the post and embodying means to exert downward strain on the post to rigidly clamp the same to the floor, the lower end of said rod extending into the floor and provided with a lateral head below the surface of the floor and bearing up against a portion of the floor below the post to resist the upward strain on the rod when holding the post clamped to the floor, said floor formed with an elongated hole for the insertion and removal of said head, said head after insertion through said hole adapted to be turned to project under the floor at opposite edges of the hole, the lower end of the post covering said hole.

3. An office railing comprising a post having a bore extending longitudinally therethrough, a foot having a laterally-enlarged flat base removably resting on the floor, said foot having a vertical socket extending therethrough, the lower end of the post being tightly secured in said socket, and a rod at its lower end having anchoring means arranged to be secured in the floor to resist upward pull on said rod, said rod formed to extend vertically through said foot and post

and provided with means for forcing the post down to hold the base of its foot tightly to the floor, said base formed to bear down on an extended area of the floor around said rod and over the portion of the floor in or under which said anchoring means is located.

4. A removable office railing post having opposite side faces and at its edges formed to receive railing panels, the upper end of said post formed to receive rails, said post formed with a bore extending longitudinally therethrough, the lower end of said post being tapered, a foot for said post having a tapered socket extending vertically therethrough, said tapered end of the post being tightly fitted and secured in said socket, said foot having a laterally enlarged flat base to rest on the floor, and a tie rod adapted to extend through the floor and be secured therein and pass upwardly through said socket and bore and provided with means to hold the post and foot tightly to the floor.

5. An office railing post having a longitudinal bore extending therethrough and at its lower end provided with and fixed in a foot having a laterally enlarged base resting on the floor, and a rod rising from the floor and extending vertically through said foot and said bore and at its upper end provided with means to exert downward strain on the post to hold said base tightly to the floor, the lower end of said rod provided with a lateral head arranged under the portion of the floor on which said base is located so that said portion of the floor is clamped between said base and said head, said base covering the portion of the floor through which said rod extends.

6. An office railing post having means for removably clamping the same to the floor, said post having longitudinal edge grooves, and a removable strip arranged longitudinally along one edge of the post and having an exterior longitudinal shoulder and a longitudinal rib fitting in the groove of said edge.

In testimony whereof we affix our signature in presence of two witnesses.

HENRY KLEIN.
LAWRENCE J. MEAD.

Witnesses:

REBECCA HILLIKER,
ALICE J. CALVIN.