F. KNOBEL & E. F. ASAY.

RAIL CHAIR.

APPLICATION FILED AUG. 17, 1909.

975,536.

Patented Nov. 15, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

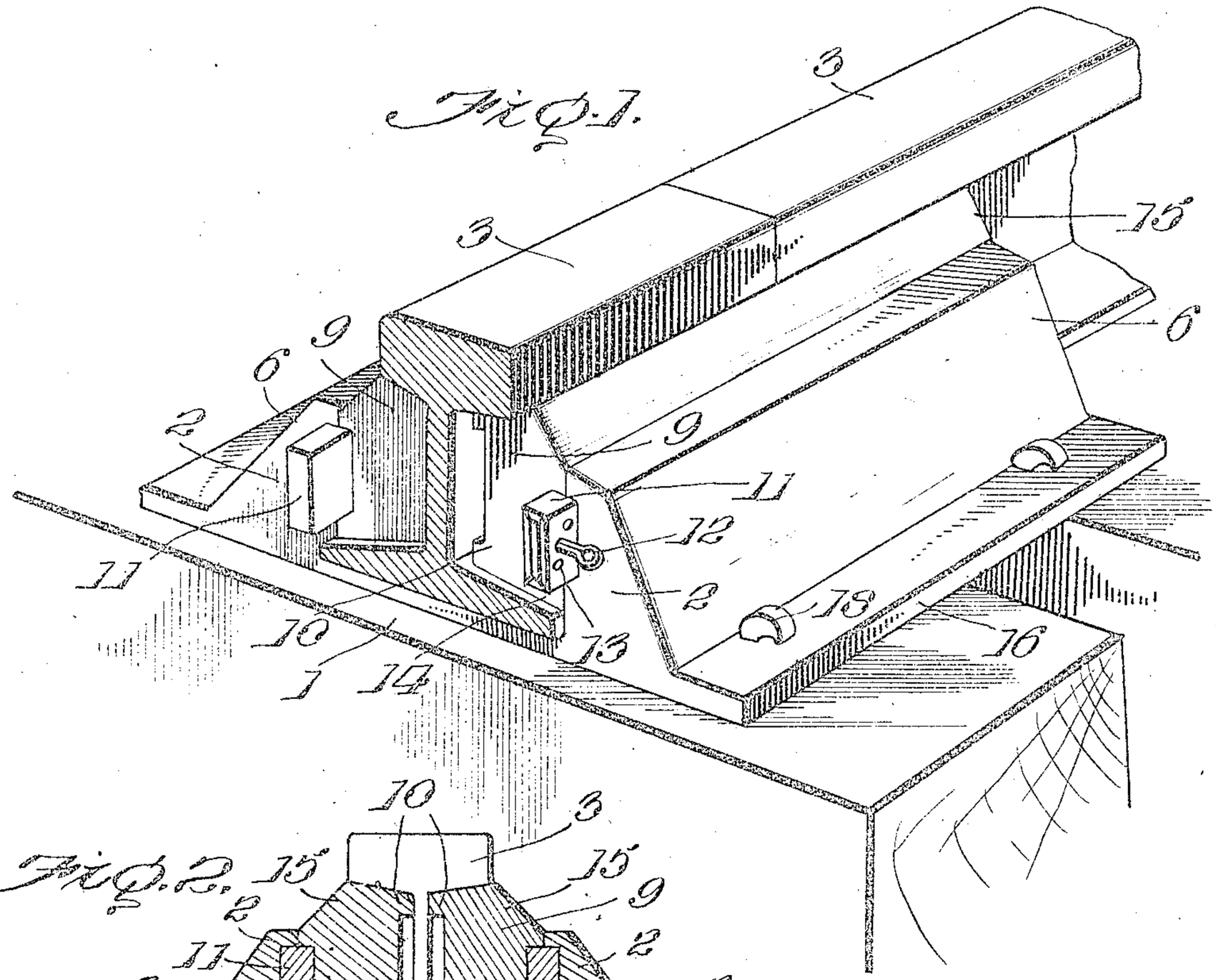

Fig. 2.

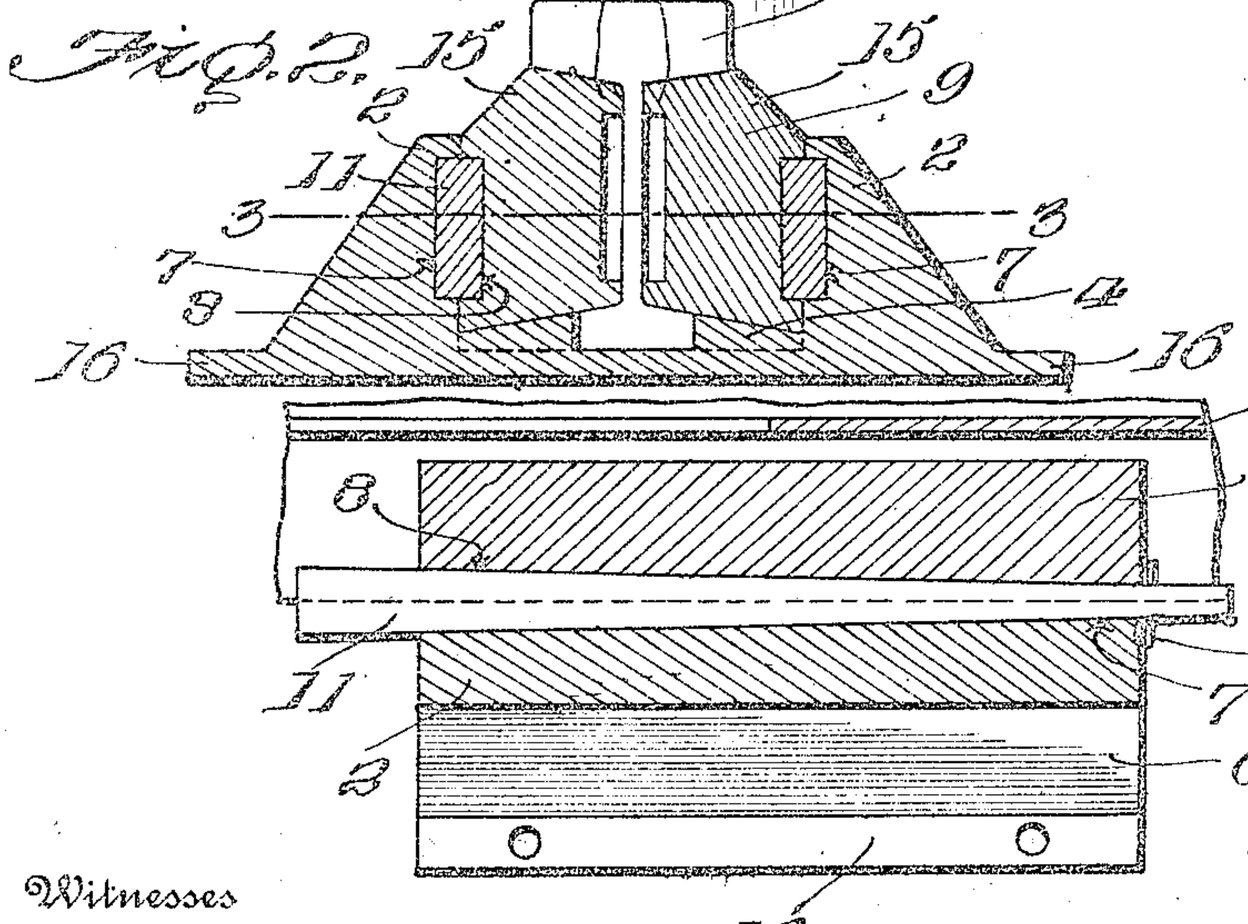

Fig. 3.

Witnesses

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2 SHEETS—SHEET 2.

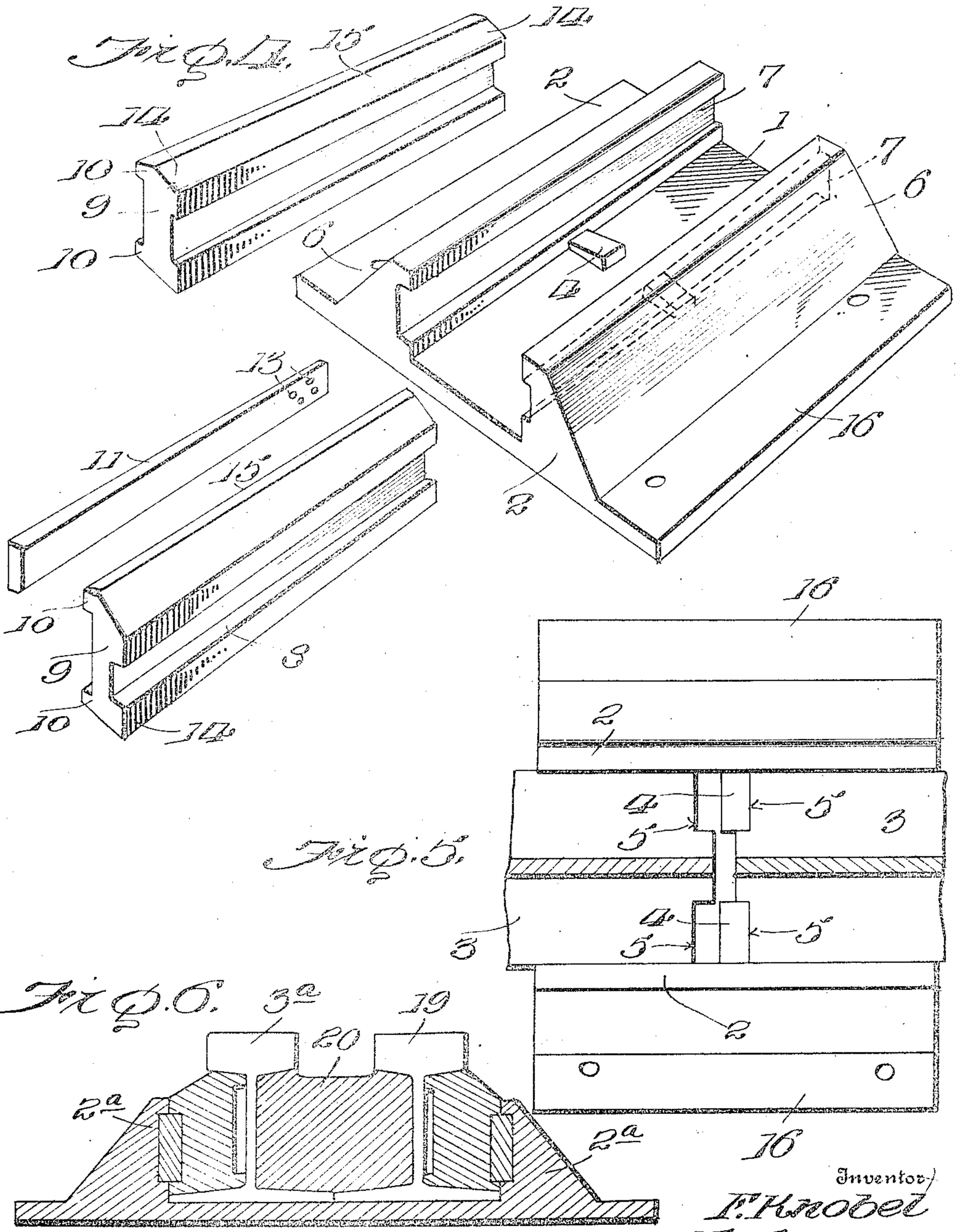

Fig. 5.

Fig. 6.

Witnesses

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UNITED STATES PATENT OFFICE.

FRED KNOBEL AND EDWARD F. ASAY, OF ODESSA, NEBRASKA.

RAIL-CHAIR.

975,536. Specification of Letters Patent. Patented Nov. 15, 1910.

Application filed August 17, 1909. Serial No. 513,355.

To all whom it may concern:

Be it known that we, FRED KNOBEL and EDWARD F. ASAY, citizens of the United States, both residing at Odessa, in the county of Buffalo and State of Nebraska, have invented certain new and useful Improvements in Rail-Chairs, of which the following is a specification.

The present invention comprehends certain new and useful improvements in track equipment for railways, and the invention has for its object a particularly efficient rail chair which embodies novel means for securing the rail therein in lieu of the customary bolts that have been found so objectionable in practice, as they are liable to work loose and require frequent attention.

Another object of the invention is a rail chair that admits of the rail being quickly and conveniently applied thereto and that in addition to holding the rail in place also serves to brace the same against excessive strain and to maintain the rail against creeping movement.

A further object of the invention is a device of this character which is adapted to shed any foreign matter accumulating thereon; which embodies to a marked degree the characteristics of simplicity, durability and strength; and which is composed of comparatively few parts that are susceptible of being expeditiously assembled and are not likely to get out of order.

With these and other objects in view that will more fully appear as the description proceeds, the invention consists in certain constructions and arrangements of the parts that we shall hereinafter fully describe and then point out the novel features of in the appended claim.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a sectional perspective view illustrating the application of the invention; Fig. 2 is a transverse section thereof; Fig. 3 is a fragmentary horizontal section on the line 3—3 of Fig. 2; Fig. 4 is a perspective view showing the parts that are placed in juxtaposition; Fig. 5 is a horizontal sectional view showing the lugs for holding the rails against creeping movement; and, Fig. 6 is a transverse section of a modification hereinafter specifically described.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

A rail chair constructed in accordance with our invention consists essentially of a substantially flat base plate 1 of suitable metal which is arranged to be applied to a conventional wooden tie and which is provided with opposed cheeks 2 that extend longitudinally in the direction of the track and upstand on opposite sides of the meeting ends of the rails 3, the cheeks being spaced apart a distance substantially equal to the width of the bases of the rail, whereby to insure against the lateral displacement thereof and maintain the same in longitudinal alinement. Between the cheeks the base plate is formed at corresponding intermediate points with upstanding lugs 4 that are interposed between the abutting ends of the rails and are accommodated in corresponding recesses or notches 5 in the base flanges thereof, so as to hold the rails against longitudinal creeping movement.

The outer walls of the cheeks are inclined, as indicated at 6, for a purpose to be presently disclosed, while the inner or opposed walls of the cheeks are substantially vertical and are formed intermediate of their upper and lower edges with longitudinal grooves 7 that extend throughout the entire length. These grooves are arranged to register with similar grooves 8 extending longitudinally in the outer walls of fish plates or clamp bars 9, the fish plates being disposed on opposite sides of the rails and being driven longitudinally into position between the webs thereof and the respective cheeks. The fish plates are of such height as to fit snugly between the base flanges of the rails and the over-hanging portions of the heads thereof, and thus serve to materially brace the latter against excessive strain. In the present instance the fish plates are formed at their inner walls in proximity to their upper and lower edges with longitudinal ribs or beads 10 that abut against the webs

of the rails, the fish plates being thus spaced apart from the webs intermediate of the ribs, as best seen in Fig. 2.

In order to press the fish plates inwardly against the rails and also to lock the parts against upward displacement from between the cheeks, wedges or keys 11 are driven longitudinally in the respective pairs of registering grooves 7 and 8, preferably from opposite ends of the rail chair. The opposing walls of these grooves preferably converge longitudinally to compensate for the gradually increasing width of the wedges and thus cause the latter to exert an even pressure throughout the length of the cheeks and fish plates, as is manifestly desirable.

Attention is particularly directed to the fact that the wedges are of such length that when in position the smaller ends thereof project beyond the corresponding ends of the cheeks and fish plates (see Fig. 1). This is desirable as it admits of a keeper 12, that in the present instance is in the form of a stout cotter pin, being passed transversely through an aperture 13 in the smaller end of each of the wedges to insure against the accidental retraction thereof. A plurality of apertures 13 are formed in the smaller end of each wedge to afford different adjustments of the parts, and said apertures are preferably arranged in oblique lines, as best illustrated in Fig. 4. For convenience the ends of the wedges may be beveled, as at 14, so as to be susceptible of being more easily driven into place when assembling the parts.

The upper portions of the fish plates extend upwardly beyond the cheeks and have inclined outer walls 15 that are disposed at substantially the same degree of inclination as the outer walls 6 of the cheeks. The office of these inclined walls is to effectually shed any rain water, dirt, or other foreign matter and prevent the same from accumulating upon the rail chair.

In carrying the invention into practice it is necessary to rigidly attach the rail chair to the tie, and as the preferred means for accomplishing this purpose, the base plate 1 is extended beyond the outer walls of the cheeks, as indicated at 16, and is formed in its extended portion with a plurality of openings through which spikes 18 or similar fastening devices may be introduced.

From the foregoing description in connection with the accompanying drawings, it will be apparent that we have provided a rail chair which admits of the rail being quickly and conveniently applied thereto and requires no subsequent attention, and which retains the rail in place therein in a novel manner without the use of bolts, thus rendering it unnecessary to bore holes in the rail and materially decreasing the cost of construction and the maintenance of the track.

Among the many advantages residing in this structure, attention is particularly directed to the fact that it maintains the rail against creeping movement; that it is not susceptible to injury through the expansion or contraction of the rail; and that it embodies to a marked degree the characteristics of simplicity, durability and strength and may be easily and cheaply manufactured.

While for the purpose of illustration the rail chair is described and shown in the present instance as applied at the joint of the rails, it is to be understood that it is not limited to any such use but also may be advantageously employed at points intermediate of the ends of the rails.

Another embodiment of the invention is illustrated in Fig. 6, wherein the cheeks 2^a are spaced apart a sufficient distance to accommodate both the main rail 3^a and the guard rail 19. The rails are spaced apart by the customary interposed block 20 and are retained in the rail chair in substantially the same manner as hereinbefore described. The advantages of this structure over the devices ordinarily employed for this purpose, will be readily appreciated.

Our improved rail chair is also constructed without the lugs 4, so as to be capable of being quickly applied to the broken ends of a rail in an emergency to form an effective splice.

Having thus described the invention what is claimed as new is:

The combination of the abutting ends of a pair of rails which are recessed at the corners of the basal flanges, a base plate fitting under the rail ends and formed with upstanding cheeks located upon opposite sides of the rails, the inner faces of the upstanding cheeks being substantially vertical and the space between the same corresponding to the width of the base of the rails to admit of the rails being readily lowered into position or lifted therefrom, the base plate being provided at its middle portion between the said cheeks with a pair of lugs which are received within the recessed corners of the basal flanges of the rails and serve to prevent longitudinal creeping of the rails, clamping bars fitted between the cheeks and opposite sides of the rails, the inner face of each of the clamping bars engaging the web of the rails and being received between the basal flanges and heads thereof, while the outer face of each of the clamping bars abuts against the inner face of the cheek, the abutting faces of the cheek and clamping bar being formed with corresponding longitudinal grooves, wedges driven longitudinally into the corresponding grooves to force the clamping bars inwardly

and cause them to firmly engage the rail ends, the wedges upon opposite sides of the joint being driven in opposite directions and the extremities of the wedges being provided with a series of openings, and pins engaging the openings to lock the wedges against withdrawal.

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

FRED KNOBEL. [L. S.]
EDWARD F. ASAY. [L. S.]

Witnesses:
LESLIE R. PRIOR,
J. A. BOYD.