

No. 675,003.

Patented May 28, 1901.

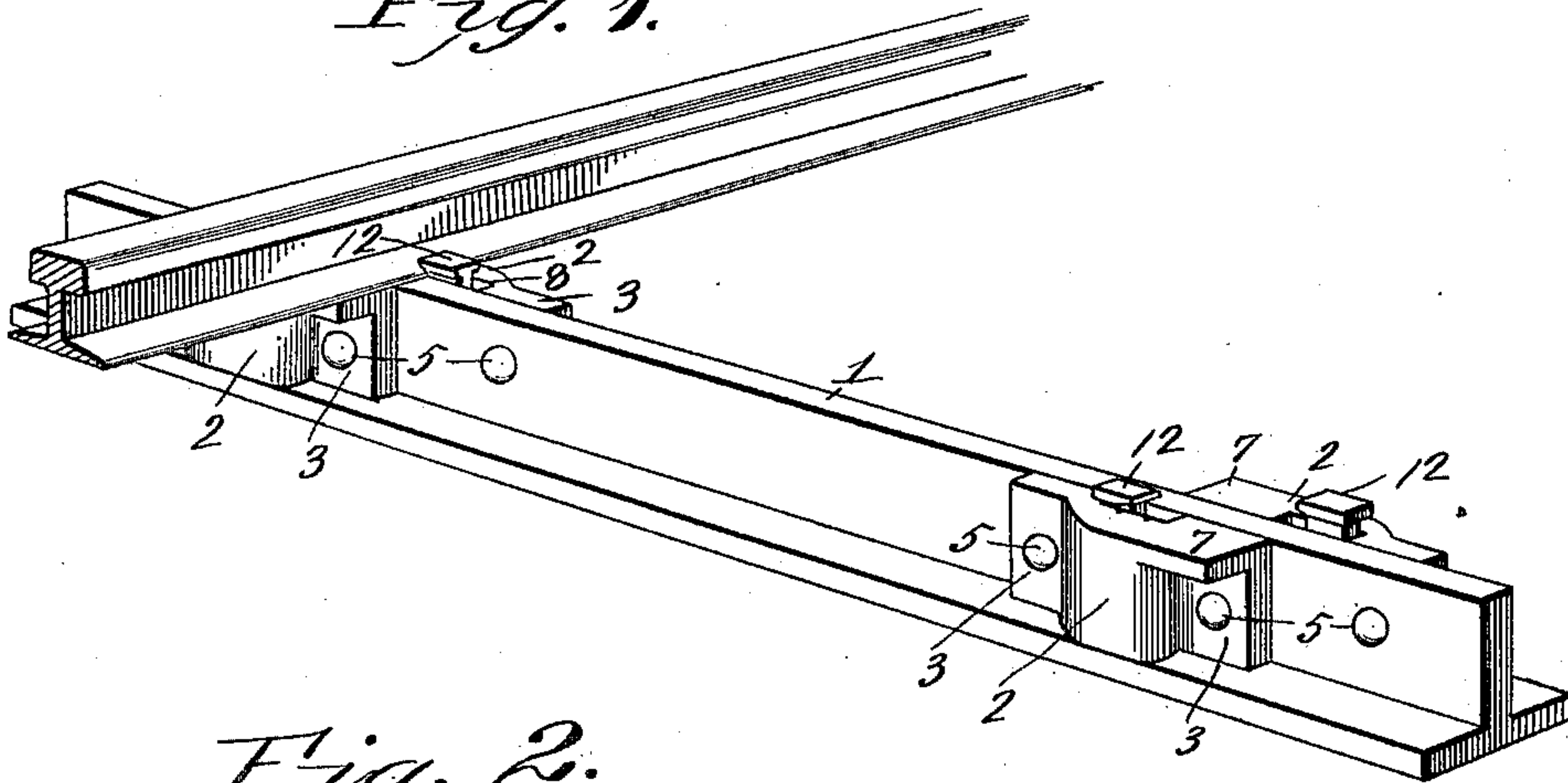
G. W. ELTZROTH.

RAILROAD TIE.

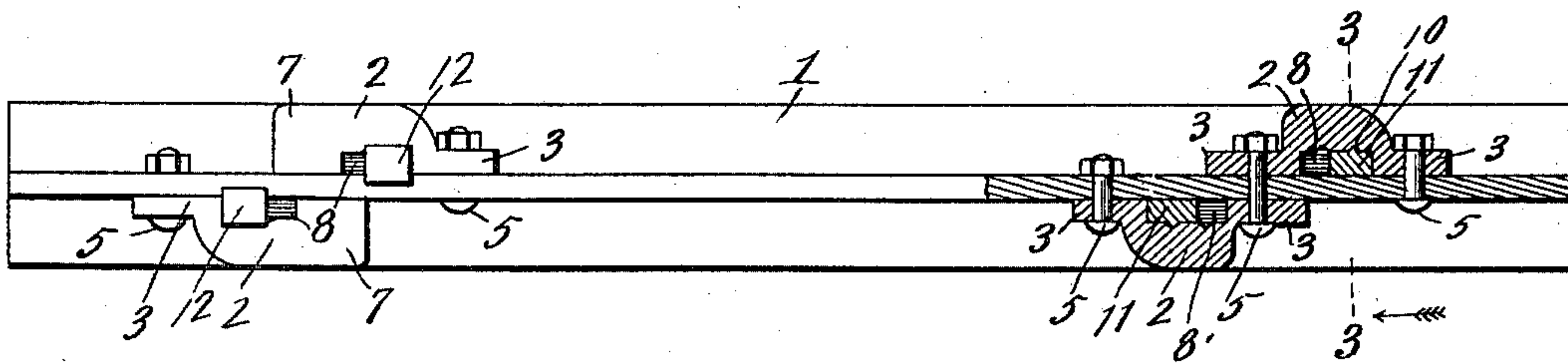
(Application filed Jan. 18, 1901.)

(No Model.)

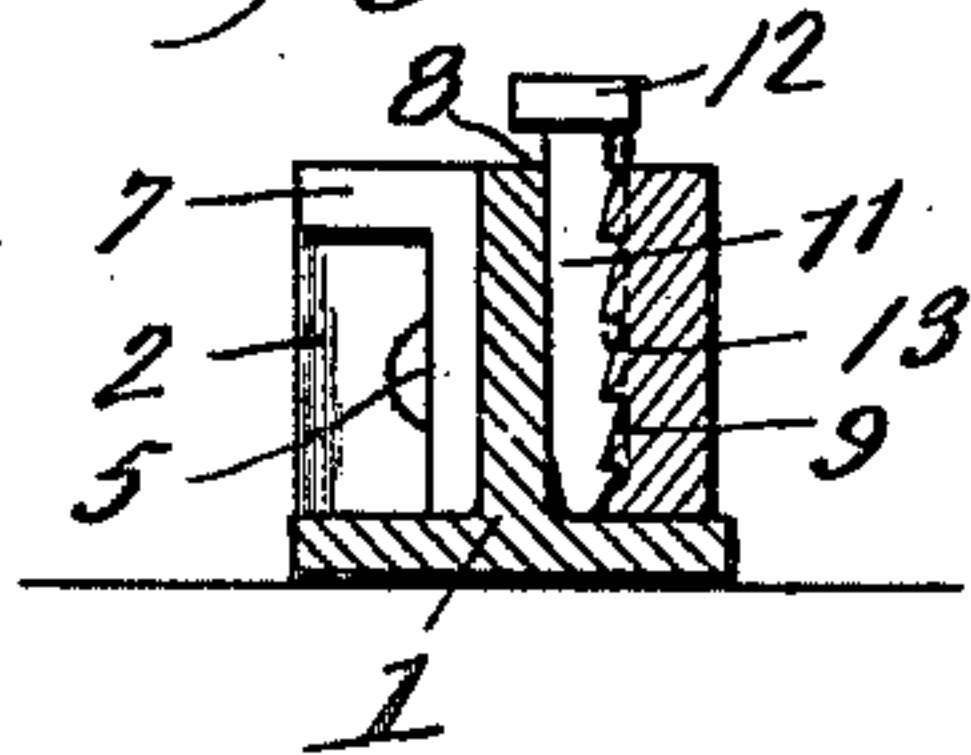
*Fig. 1.*



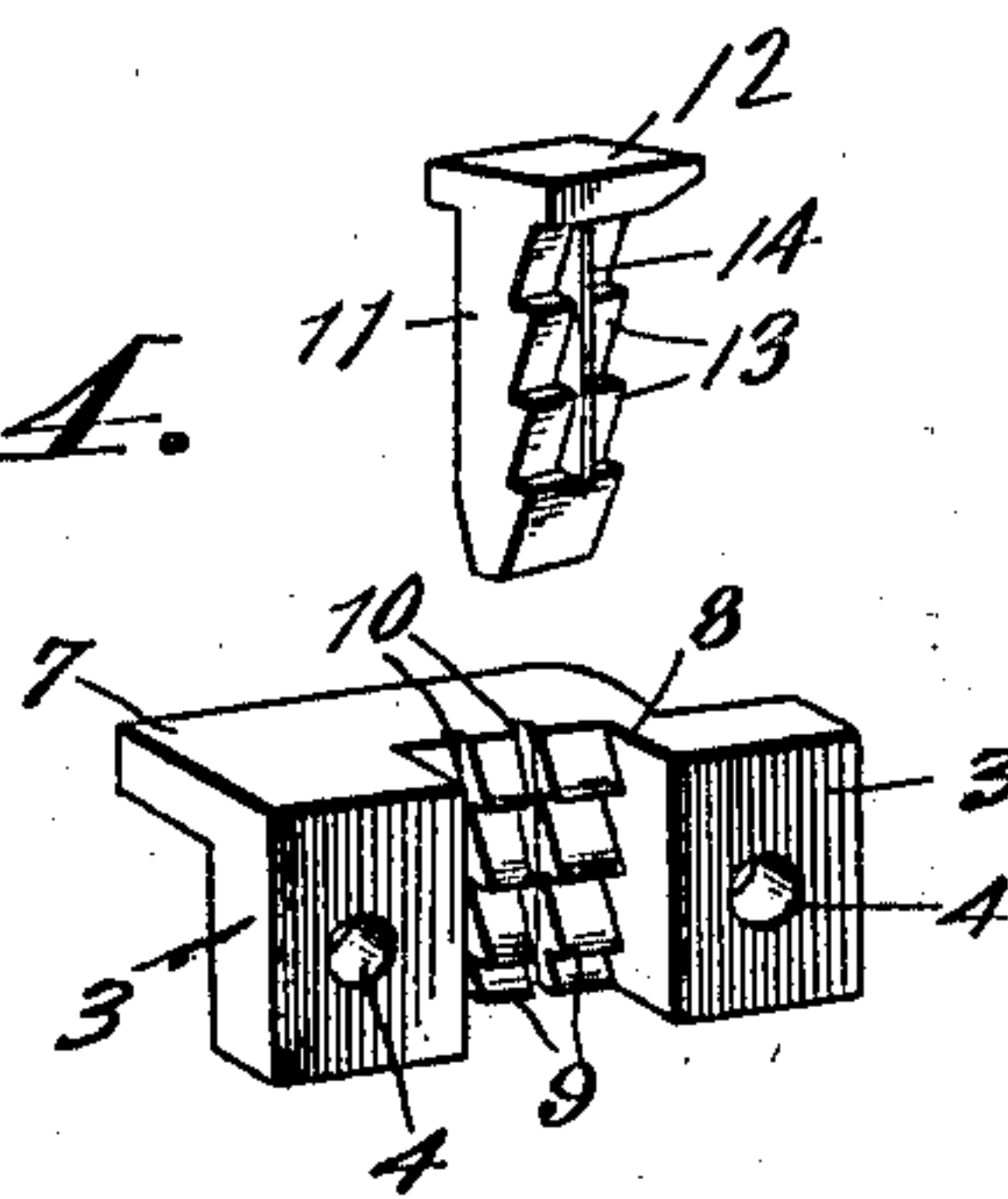
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses

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# UNITED STATES PATENT OFFICE.

GEORGE W. ELTZROTH, OF MARION, INDIANA, ASSIGNOR OF ONE-HALF TO  
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## RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 675,003, dated May 28, 1901.

Application filed January 18, 1901. Serial No. 43,786. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. ELTZROTH, a citizen of the United States, residing at Marion, in the county of Grant and State of Indiana, have invented a new and useful Railroad-Tie, of which the following is a specification.

This invention relates to railroad-ties, and has for its object to provide an improved cross-tie and track-fastening combined in which a comparatively narrow tie has broad rail-chairs and the fastenings are arranged for convenient application and removal, so as to facilitate the laying of a track and the replacing of rail-sections, and also to arrange for adjusting the fastenings to accommodate the tie to rails having different widths of base-flanges.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a cross-tie embodying the present invention and showing a portion of a rail-section supported thereby. Fig. 2 is a top plan view thereof, partly in section. Fig. 3 is a transverse sectional view taken on the line 3 3 of Fig. 2. Fig. 4 is a detail perspective view of the fixed and adjustable parts of the track-fastening.

Like characters of reference designate corresponding parts in all of the figures of the drawings.

Referring to the drawings, 1 designates an inverted substantially T-shaped metallic cross-tie which rests upon its base-flange and presents a comparatively narrow upstanding longitudinal body-rib for the support of the rail-sections. Adjacent to each end of the tie there are provided the duplicate chair-sections 2, which are located at opposite sides of the tie. Each section or member has an intermediate comparatively thick body por-

tion, from which project the opposite terminal ears 3, which are flush with the flat inner face of the body and are provided with the respective perforations 4 for the reception of the respective bolts 5, which also pass through the tie, and thereby connect the section or member flat against one side of the tie and resting upon the base-flange thereof. The top of the section is flat and flush with the top edge of the tie and is provided with a lateral extension or flange 7 at the inner end of the section, so as to increase the area of the top of the section, and thereby produce a comparatively broad rail-chair. As best indicated in Fig. 2 of the drawings, it will be seen that the inner ears of the opposite sections are overlapped, so that a single bolt serves for both ears, and the broad inner end portions of the sections cooperate to form a rail-chair projecting equally at opposite sides of the tie. In the inner face of each section there is provided a vertical intermediate transverse groove or recess opening outwardly through the top and bottom of the section, as indicated at 8, the back thereof being provided with ratchet-teeth 9, extending across the same and having a pair or more of parallel grooves 10 intersecting the teeth transversely thereof. When the section is applied to a tie, the recess is closed at all sides but the top thereof, which is open for the reception of a fastening 11 in the form of a spike, which has the usual laterally-projecting head 12 and has its shank furthermore provided with transverse ratchet-teeth 13, arranged reversely to those of the recess in the adjacent chair-section, so as to interlock therewith. The teeth of the spike are intersected immediately by means of a longitudinal rib or flange 14, which is designed to take into one of the grooves in the back of the socket. It will be understood that the spike is narrower than the width of the socket, so that it may be adjusted from one of the grooves to the other, but snugly fits the depth of the socket, so as to interlock with the teeth thereof, and thereby prevent accidental upward displacement, while the rib and groove prevent lateral displacement of the spike.

In laying a track the ties are arranged in place with the rail-chair sections applied



thereto, after which a rail-section—as, for instance, as shown in Fig. 1—is placed transversely across the ties and resting upon the rail-chairs thereof, after which the spikes are  
 5 dropped into the several sockets at opposite sides of the rail, so as to have their projecting heads overlap the base-flange of the rail in the usual manner, thereby securely fastening the rail to the cross-ties. It will be  
 10 understood that the grooves in the backs of the sockets are arranged so as to dispose the spikes at the proper intervals to snugly embrace the flanges, and several grooves are provided to accommodate the tie to rails hav-  
 15 ing different widths of flanges.

From the foregoing description it will be apparent that the rail rests upon a firm foundation formed by the edge of the tie and the tops of the chair-sections, which rest upon  
 20 the base-flange of the tie, so as to prevent strain from being placed upon the bolts. Also the parts of the device may be conveniently assembled and taken apart, so as to facilitate the laying of a track and the replacing of in-  
 25 dividual rail-sections. It is not designed to have the spikes driven into the sockets, as it is intended to loosen the bolts 5, so as to loosen the members 2, whereby the spikes may be dropped into the sockets, after which  
 30 the bolts are tightened to grip the spikes between the members and the tie. In a similar manner the spikes may be readily removed.

What is claimed is—

1. The combination of a cross-tie, rail-chair  
 35 sections secured to opposite sides of the tie, with their inner ends overlapped to form a broad seat, a common fastening piercing the overlapped inner ends of the chair-sections, and track-fastenings carried by the respective  
 40 chair-sections and spaced to receive a rail therebetween.

2. A rail-chair, having opposite vertical sockets to lie at opposite sides of a rail, and  
 45 also provided with ratchet-teeth, and track-fastenings for insertion into the respective

sockets, and having ratchet-teeth to interlock with those of the sockets.

3. A rail-chair, having opposite vertical sockets, which are provided with ratchet-teeth, and a groove intersecting the same  
 50 transversely, and track-fastenings for insertion into the sockets and provided with ratchet-teeth to cooperate with those of the sockets, and also having intermediate longitudinal ribs or flanges to take into the re-  
 55 spective grooves.

4. The combination with a tie, of a chair-section removably secured to one side of the tie, and having an intermediate vertical re-  
 60 cess which opens through the top of the section and has its front closed by the tie, the back of the recess being provided with ratchet-teeth, and a track-fastening to be inserted into the recess and having ratchet-teeth to  
 65 interlock with those of the chair-section.

5. A rail-chair having a laterally-elongated vertical socket which is open at the top, and a track-fastening which snugly fits the socket transversely in one direction and is adjust-  
 70 able laterally therein in a direction at substantially right angles to the direction of the snug fit.

6. As a new article of manufacture, a section of a rail-chair, having an enlarged intermediate portion, provided in its flat inner face  
 75 with an intermediate transverse recess which opens outwardly through one edge of the section, opposite terminal longitudinally-extended perforate attaching-ears flush with the in-  
 80 ner face of the section, and a top flange flush with that edge of the section through which the recess opens and forming an extended seat.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in  
 85 the presence of two witnesses.

GEORGE W. ELTZROTH.

Witnesses:

WILLIAM R. HUNTER,  
 SAMUEL B. BESHORE.