

(No Model.)

G. A. BARTHOLOMEW.
RAIL JOINT.

No. 506,899.

Patented Oct. 17, 1893.

Fig. 1.

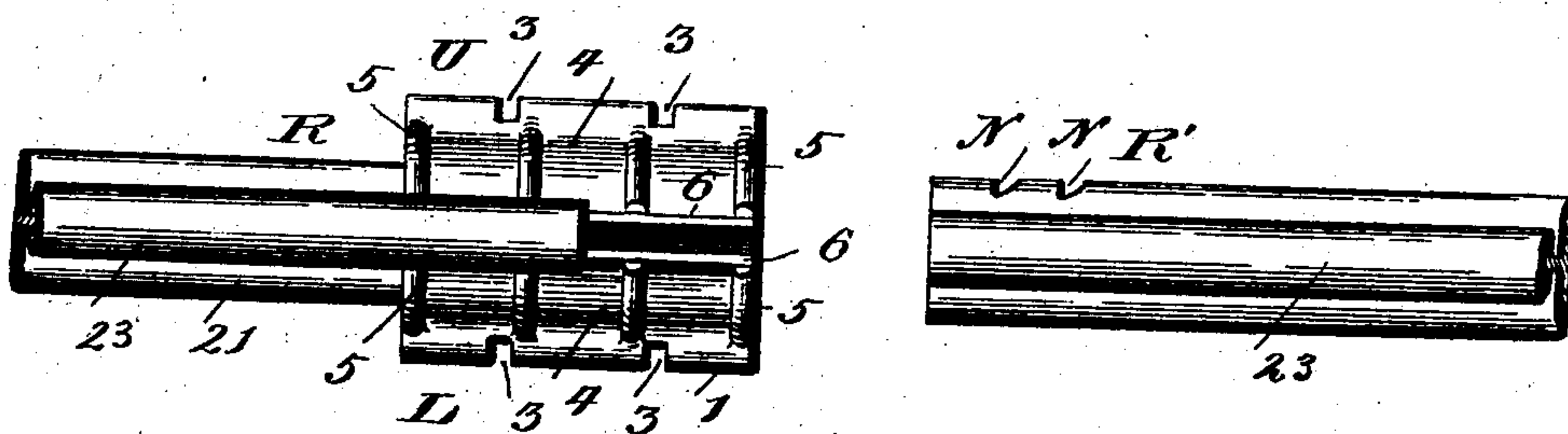


Fig. 2.

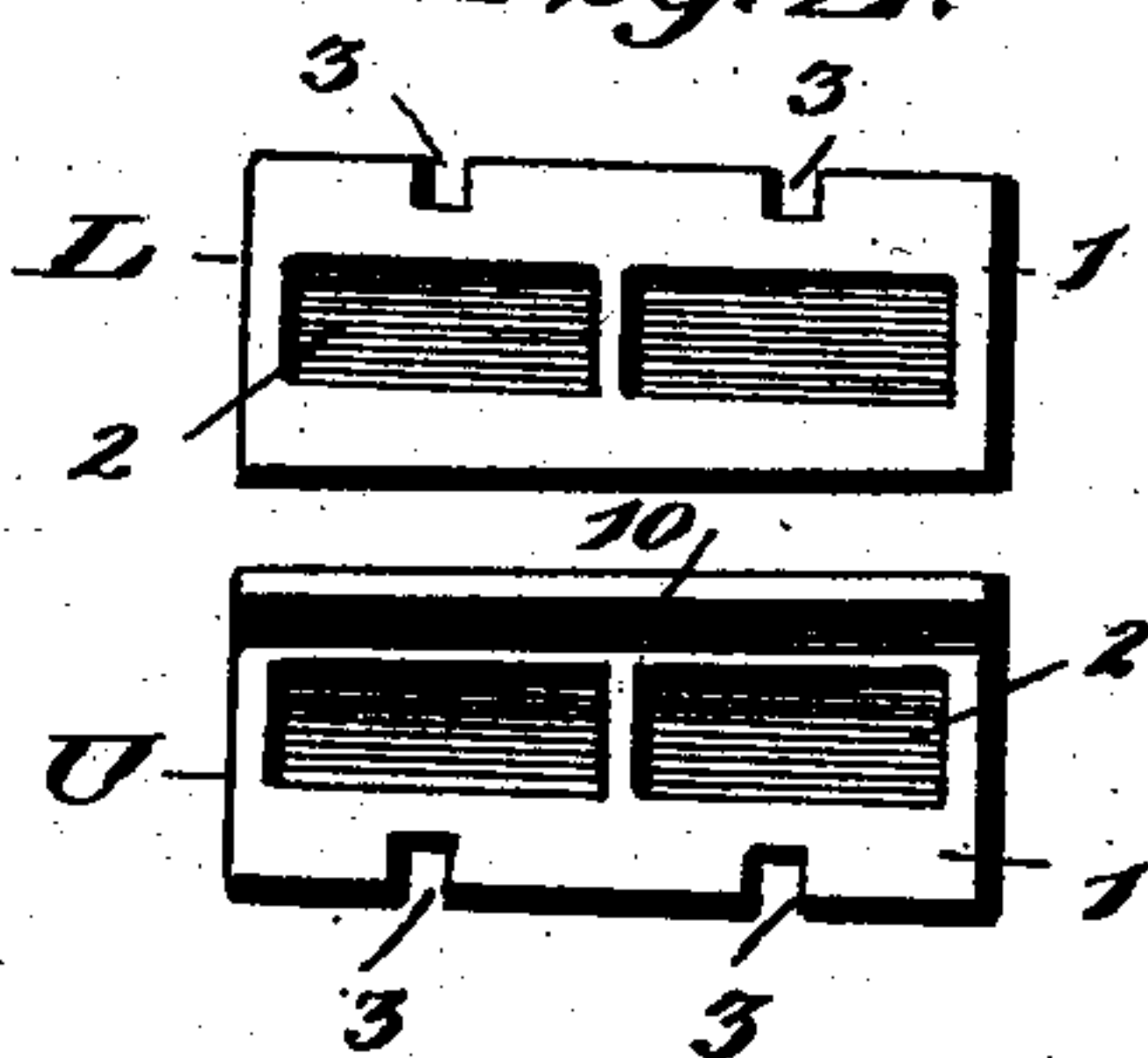


Fig. 3.

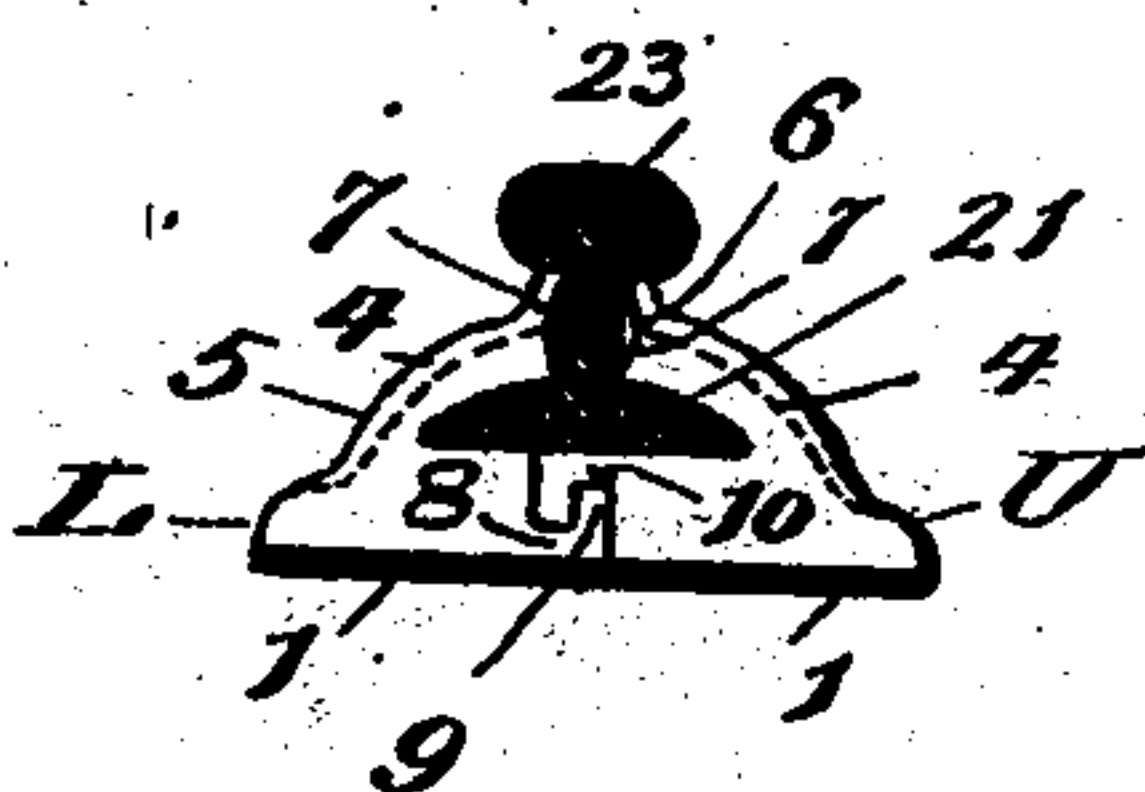
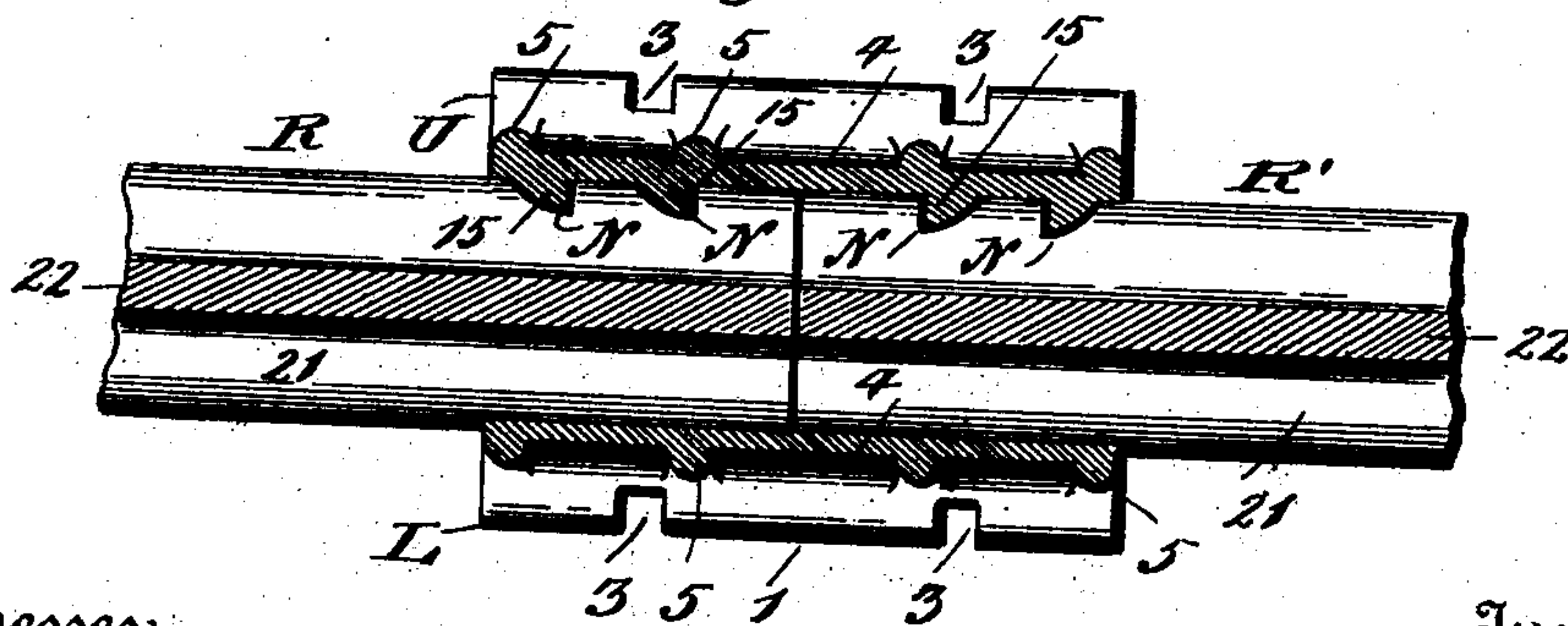


Fig. 4.



Witnesses:

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Inventor:

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by Coleman & Co. Attorneys.

UNITED STATES PATENT OFFICE.

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RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 506,899, dated October 17, 1893.

Application filed January 25, 1893. Serial No. 459,639. (No model.)

To all whom it may concern:

Be it known that I, GILBERT A. BARTHOLOMEW, a citizen of the United States, and a resident of Maumee, Lucas county, State of Ohio, have invented certain new and useful Improvements in Rail-Joints; and my preferred manner of carrying out the invention is set forth in the following full, clear, and exact description, terminating with a claim particularly specifying the novelty.

This invention relates to railways, and more especially to the chairs which are employed to connect the meeting ends of rails; and the object of the same is to produce a rail-joint which will afford the greatest strength to resist the strain on the rails and which will also permit the rails to have a certain longitudinal movement as in their expansion and contraction under the varying degrees of temperature.

To this end the invention consists in the rail-joint hereinafter described, and as illustrated in the drawings, wherein—

Figure 1 is a plan view showing one rail locked in my improved chair and the adjacent end of a second rail slightly removed. Fig. 2 is a bottom plan view of the two members of the chair slightly separated. Fig. 3 is an end elevation of these two members and a section through the rail which is locked therein. Fig. 4 is an enlarged horizontal section through the chair and the ends of two rails on a line just above the base of the rails.

The letters R and R' designate the meeting ends of two rails which are of the usual construction except that in one side edge of the base of each rail are formed notches N (preferably two in number) each of which has one flat side nearer the end of the rail and one inclined or beveled side nearer the center of the rail. These notches can be formed in any suitable manner or by any suitable means, but they are so arranged near the ends of the two rails that they shall be on the same side of the continuous rail and preferably at the outer side of the track.

The letters U and L designate respectively what I shall call the upper and lower members of the rail-chair, these members being substantial duplicates except in the particu-

lars hereinafter noted, and preferably made of malleable castings about as shown. That is to say, each member has a flat base 1 which may be recessed as at 2 in its lower face for the sake of lightness and which has notches or holes 3 in its outer edge for the passage of the spikes which are to secure the member to the tie; and from this base near its outer edge rises the body 4 which curves inwardly so as to pass over the base 21 of the rail and is strengthened by exterior ribs 5. The inner edge of this body is enlarged vertically as at 6 and its inner face 7 is slightly dished and of a sufficient height to bear closely against the web 22 of the rail and to fit rather snugly between the top of the base 21 and the under side of the ball 23 of the rail. This is the construction of each member. The base of the lower member L is formed with a narrow tongue 8 projecting from the bottom of its inner edge and turned up as at 9; and the base of the upper member U is provided with a similar tongue projecting from the upper edge of its base and turned down so as to form a groove 10 into which the upturned edge 9 of the tongue can pass. The tongue and groove are set slightly oblique to the length of the two members as seen in Fig. 2, so that if the tongue and groove are caused to engage and the lower member then moved until it stands opposite the upper member, the two members will be firmly locked together, after which they can be spiked to the tie as will be understood, to prevent their separation.

It is well known to those familiar with this art that as a heavy load passes over a rail (especially near one of its ends) the ball yields downwardly, ever so little of course; and it is well known that in time this yielding will compress a fish-plate which stands on edge between the base and the ball of the rail to such an extent that it will eventually become loose vertically. By dishing the edge of body 6 of each member of the chair, I may provide means for allowing a little spring motion downwardly each time the ball of the rail is thus depressed; and the result is that the edge of the chair-body will not become loose but by its spring action will al-

ways retain its position between the base and the ball of the rail to strengthen the latter and prevent its being crushed.

Within the upper member U of the chair, 5 near each end thereof, is formed a number (preferably two) of teeth 15, each of which is of a shape to fit loosely in one of the notches in the base of the rail and is correspondingly shaped with one flat and one beveled side. 10 The teeth are so located that when the parts are assembled the teeth will take into the notches in the rails and will hold the latter against displacement—yet as the rails expand and contract under heat and cold they will 15 have a slight longitudinal movement over these teeth by reason of the notches being slightly larger than the teeth. By having the flat faces of the teeth toward the center of the joint it will be seen that the rails are 20 positively prevented from withdrawal; and by having the beveled faces nearer the ends and inclining from this member toward the other member, it will be seen that as the rail ends are pressed together or toward each 25 other, the inclined faces of the notches and teeth slip over each other and the ends of the rail are borne slightly away from the member U toward and tighter against the member L. This is at the bottom of the rail where 30 the base 21 is least affected by the changes in temperature; meanwhile the expansion of the ball 23 and web 22 will cause them to tighten themselves between the dished faces

7 of the two members. Thus it will be seen that I have produced a rail joint wherein a 35 slight depression of the ball is permitted by a spring action and it is returned to its normal position after each passage of a heavy load; hence the rail will last much longer. By my specific arrangement and relative 40 sizes and shapes of notches and teeth, I also produce a chair wherein the rail ends may be locked tightly and yet permitted to expand and contract under the varying degrees of temperature; still the ends of the rail will al- 45 ways be held tightly within the chair.

What is claimed as new is—

In a rail joint, the combination with the meeting ends of two rails whose base plates are provided in the same edges with notches 50 the sides of which nearest the end of the rail are at right angles to the length thereof and the other sides of which are beveled; of a chair composed of two members with means for locking them together and to the tie, one 55 member fitting over the notched edges of the rails and having teeth of the same shape as but smaller than said notches, as and for the purpose set forth.

In testimony whereof I have hereunto sub- 60 scribed my signature on this the 19th day of January, A. D. 1893.

GILBERT A. BARTHOLOMEW.

Witnesses:

A. F. FILES,
G. B. MOUEN.