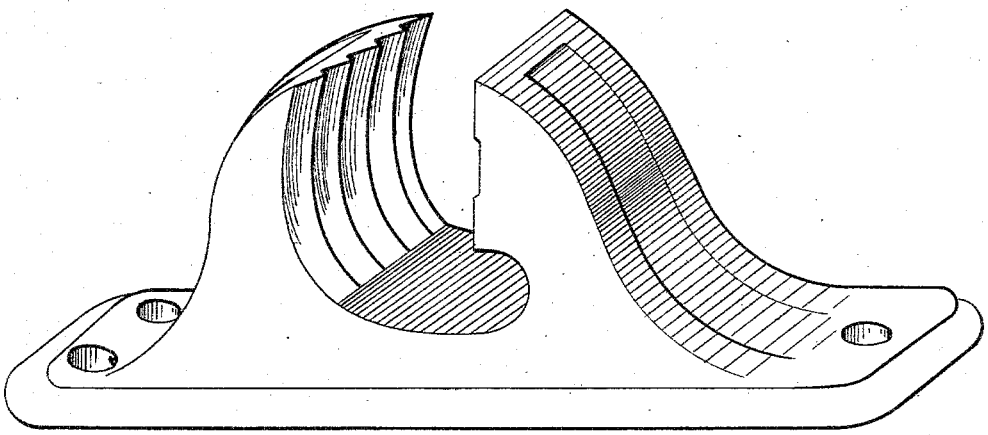
(No Model.) 3 Sheets—Sheet 1.

J. K. THOMPSON & G. R. RACE.

RAILWAY RAIL CHAIR.

No. 305,864. Patented Sept. 30, 1884.

Fig: 1.



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(No Model.) 3 Sheets—Sheet 2.

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Fig: 2

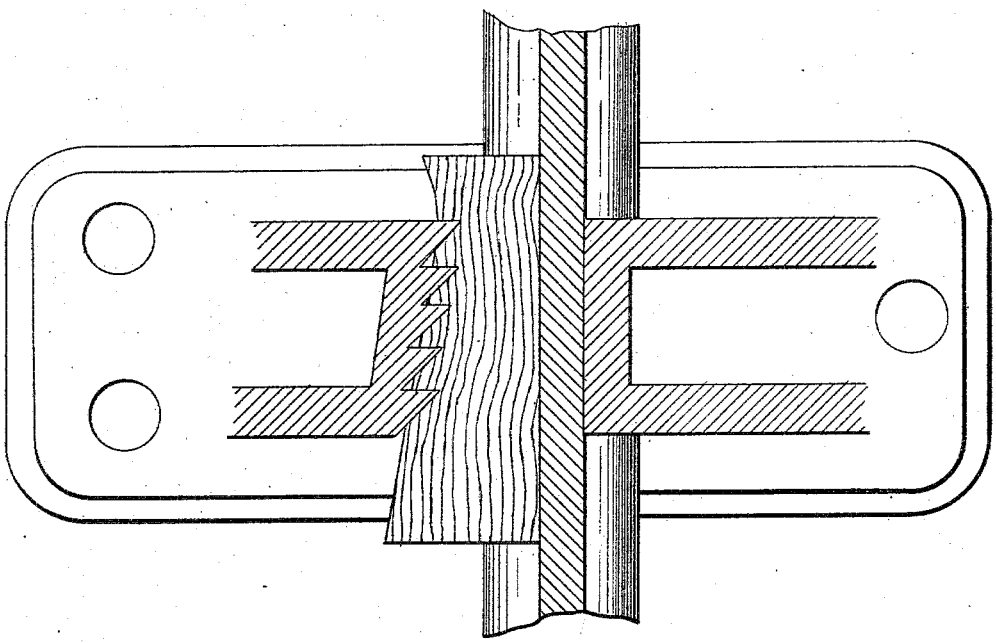

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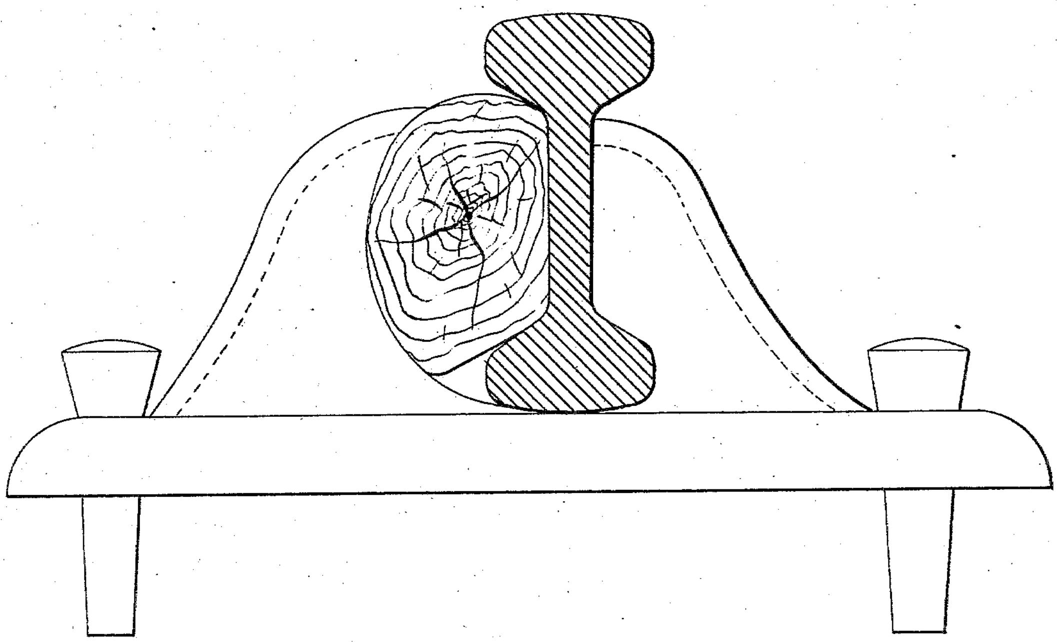
Fig: 3.



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UNITED STATES PATENT OFFICE.

JAMES KNAPTON THOMPSON AND GEORGE RICHARD RACE, OF LEEDS, COUNTY OF YORK, ENGLAND.

RAILWAY-RAIL CHAIR.

SPECIFICATION forming part of Letters Patent No. 305,864, dated September 30, 1884.

Application filed February 7, 1884. (No model.) Patented in England July 23, 1883, No. 3,612; in France January 22, 1884, No. 159,855, and in Belgium January 23, 1884, No. 63,928.

To all whom it may concern:

Be it known that we, JAMES KNAPTON THOMPSON, of Leeds, in the county of York, England, civil engineer, and GEORGE RICHARD RACE, of Leeds, aforesaid, gentleman, subjects of the Queen of Great Britain, have invented certain new and useful Improvements in the Shape and Construction of Railway Chairs and Keys, (for which we have received Letters Patent in Great Britain, No. 3,612, dated July 23, 1883; in France, No. 159,855, dated January 22, 1884, and in Belgium, No. 63,928, dated January 23, 1884,) of which the following is a specification.

Our invention relates to improvements in railway-chairs of the class in which the rail ends are secured in the jaws of a chair (one of which jaws is toothed on its inner surface) by means of a wooden key driven between the toothed jaw of the chair and the adjacent sides of the abutting ends of the rails.

The special feature of this chair is that it provides for the most secure and effectual grip of the wooden keys or wedges which are driven in between the rails and the chair to wedge up and hold the rails of permanent way in exact position. The shape and construction of the chair is such that when the wedge is driven into place it cannot fall or slip out again in the direction in which it was driven, but, on the contrary, is by the weight and force of passing trains driven farther forward, and as it is of wedge or taper shape, being half an inch thinner at the point than at the driving end, or of such other similar section as may be found most suitable, it is obvious that the key must remain a tight fit till it has been forced through the whole length of the chair. When the chair is in position, the jaw or face which touches one side of the rail, and which may be either the inside or the outside jaw, as may be found most advantageous under special circumstances, is smooth and of such a form that it accurately fits the particular section of rail in use flush with the web and round the bottom bulb, and on the other side of the rail or permanent way the jaw is made one-half (more or less) wider at the end where the key or wedge enters than at the opposite end—or, in other words, has a wedge-shape opening, the narrower end being placed in the direction in which the trains run. The face and seat of the jaw on this side of the chair is serrated, or has a number of vertically-extending ratchet-like teeth or barbs similar in shape to saw-teeth the full depth of the chair, and at such an angle or position that they firmly grip and permanently retain the key or wooden wedge until it has passed over the last projection or tooth in the jaw of the chair. Whenever the key requires to be tightened, it is simply necessary to drive it forward until it has passed over one tooth, thus giving a fresh hold or biting place in new wood for every tooth.

In order that our said invention may be most fully understood and readily carried into effect, we will proceed to describe the drawings hereunto annexed.

In the drawings, Figure 1 shows in perspective a railway-chair constructed in accordance with our invention. Fig. 2 is a horizontal section of the same. The section is taken through the jaws of the chair, the web of the rail, and the wooden key. Fig. 3 is a vertical section.

The jaw of the chair, against which the key bears, is grooved vertically from top to bottom of the surface which comes into contact with the key. The grooves are so formed as to leave vertically-extending projecting teeth. These teeth are of ratchet-like form—that is to say, they are throughout their length inclined on one side (the side next the butt-end of the wedge-key) to permit the key to be driven freely, and on the other side the faces of the teeth are abruptly shouldered, or are at right angles to the direction in which the key is inserted. The jaw of the chair is inclined at a considerable angle to the web of the rail, the opening in the chair being thus made wider at one end than at the other, and the wooden key is tapered to a corresponding form. In consequence of this shape being given to the chair and key, the thus formed wedge-like key, when it is inserted with its narrower end foremost at the wider end of the chair-opening, requires to be driven but a short distance forward in order to tighten it

upon the web of the rail. The teeth in the jaw of the chair when the key is driven penetrate to some extent into the wood and hold the key so that it cannot return, for any backward motion is directly opposed by the right-angle faces of the teeth. The keys should be driven in the direction in which the trains usually pass along the line of rails, and then the traffic on the line will tend to carry them forward and tighten them upon the rails.

The chairs are made right and left, to admit of this being the case on both sides of the line.

We do not broadly claim either a railway-chair having a jaw provided with teeth or ridges, or a railway-chair having an inclined jaw, or a railway-chair having ratchet-like teeth, or the combination of rails, a chair between the jaws of which the rail ends are received, and a wedge-like key driven between the rails and one of the jaws of the chair, as, unqualifiedly considered, such constructions and combination are older than our improvements.

Having thus described the nature of our said invention and the manner of performing the same, we would have it understood that we claim—

1. The hereinbefore-described railway-chair having the opening for the rail wider at one end than at the other, and provided at one side of the opening with the vertically-extending ratchet-like teeth, the inclined sides of which are next the wider end of the opening in the chair, as and for the purpose set forth.

2. The combination of the rail, the chair having the opening for the rail wider at one end than at the other, and having at one side of the opening the vertically-extending ratchet-like teeth, with their inclined sides next the wider end of the opening in the chair, and the wedge-like wooden key, all substantially as and for the purpose set forth.

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Witnesses:
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