(No Model.)

M. LEWIS.

RAILROAD RAIL CHAIR.

No. 590,108. Patented Sept. 14, 1897.

Fig. 1.

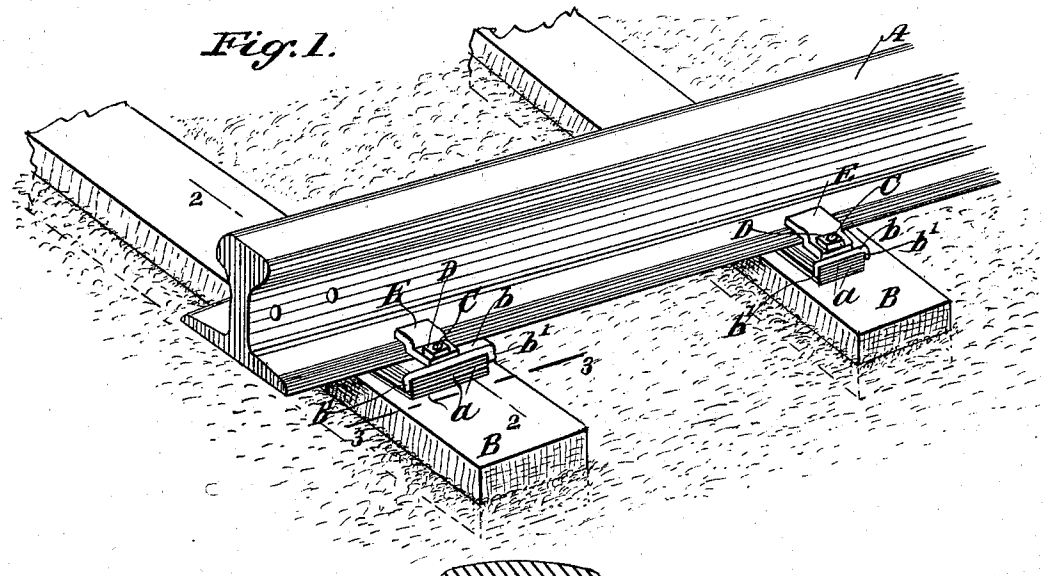


Fig. 2.

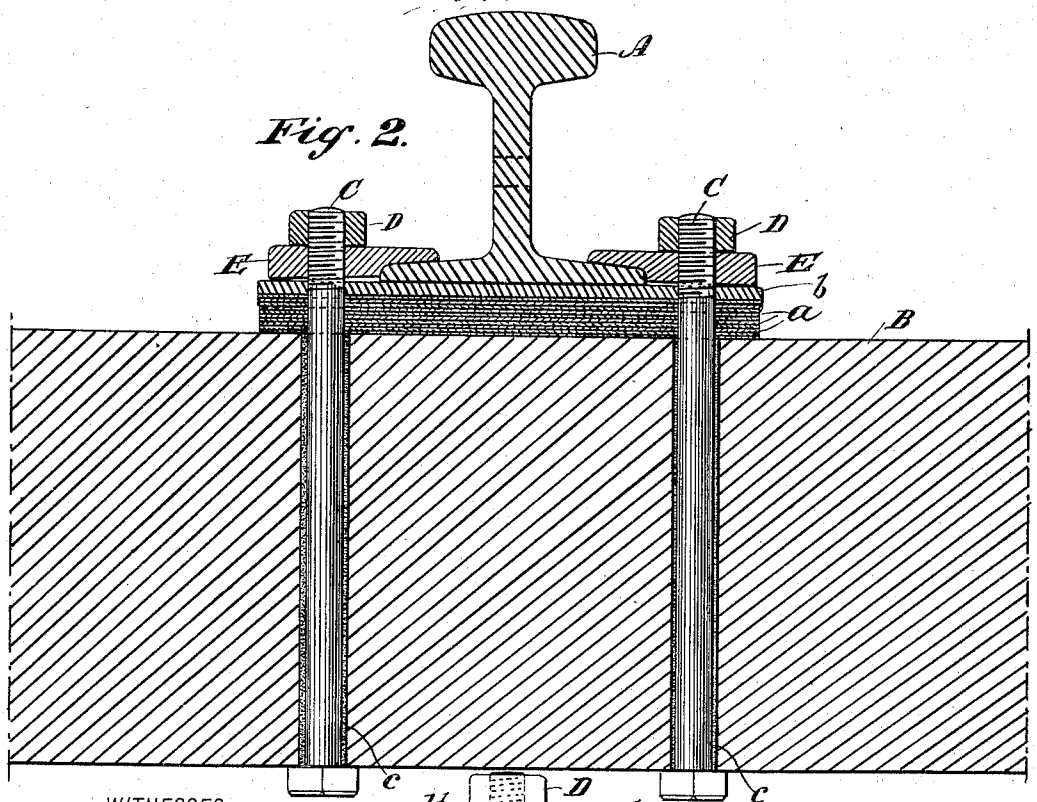
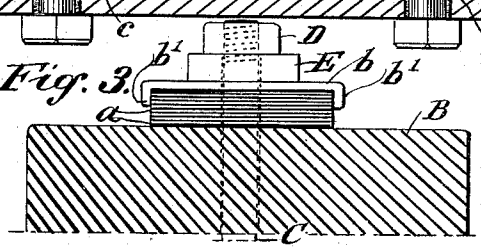


Fig. 3.



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UNITED STATES PATENT OFFICE.

MAURICE LEWIS, OF WEST GROVE, PENNSYLVANIA.

RAILROAD-RAIL CHAIR.

SPECIFICATION forming part of Letters Patent No. 590,108, dated September 14, 1897.

Application filed May 28, 1897. Serial No. 638,543. (No model.)

To all whom it may concern:

Be it known that I, MAURICE LEWIS, of West Grove, in the county of Chester and State of Pennsylvania, have invented a new and Improved Railroad-Rail Chair, of which the following is a full, clear, and exact description.

This invention relates to chairs for the support and connection of railroad-rails with the cross-ties, and has for its object to provide a novel device of the indicated character which will afford a sufficiently elastic cushion between the rails and cross-ties to neutralize the shocks due to the rapid travel of heavy trains over the rails, and thus conduce to the longevity of the railroad, as well as that of the rolling-stock which traverses the same.

A further object of the invention is to provide a cheap and highly-efficient cushioned chair for railroad-rails, and which is especially well adapted for service where stone cross-ties are utilized as a part of the road-bed, the improved rail-chairs obviating the objectionable rigidity and percussive action between the rolling-stock and the rails incidental to the employment of stone cross-ties or masonry as part of the road-bed.

The invention consists in the employment of a series of superposed metallic sheets or plates as a cushioning medium for each chair, and further consists in the peculiar construction and combination of parts, as is hereinafter described, and defined in the appended claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a portion of a railroad having the improvement applied. Fig. 2 is an enlarged transverse sectional view essentially on the line 2 2 in Fig. 1, and Fig. 3 is a cross-sectional view on the line 3 3 in Fig. 1.

In carrying into effect the features of improvement, A indicates a railroad-rail, and B cross-ties, which are formed of any suitable stone of natural formation, or they may be composed of matter of an appropriate character molded into form so as to produce artificial-stone or composition ties of proper strength, dimensions, and form.

As usual in the construction of railroads, two series of parallel rails are provided, and the cross-ties are arranged at spaced intervals on the road-bed.

One of the novel rail-chairs presently to be described is located between a rail A and each cross-tie B, the chairs being provided in sufficient number for such purpose.

Each of the improved chairs mainly comprises a superposed series of rectangular-contoured and quite thin metallic sheets or plates *a*. On the series of sheets *a* composing each chair a substantial metallic cap-piece *b* is imposed, and may advantageously be furnished with depending side flanges *b'*. The cap-piece *b* is of such relative dimensions with regard to the sheets *a* that the flanges *b'* will loosely embrace the side edges of the upper sheets, and the length of these assembled parts should be sufficient to permit the complete chair to project a proper distance at each side of the rail-base, as shown in Fig. 2. The cap-piece *b* and plates or sheets *a* have alined perforations formed therein, one perforation being near each end of the same.

Suitably-spaced perforations are produced in each tie B, near each end for the reception of clamping-bolts C, which pass upwardly through the tie and also through the chair, engaging the perforations of the latter, as clearly represented in Fig. 2.

The bolt-holes formed in the tie B are somewhat larger in diameter than the thickness of the clamping-bolts C, so as to leave an annular crevice *c* around each bolt-body, for a purpose which will presently be explained.

The upper end portions of the clamping-bolts C project above the chair cap-piece *b*, adjacent to the side edges of the rail A, when the latter is in correct position on the chairs and ties, and over these ends of the bolts, which are threaded and provided with threaded nuts D, clamping-plates E are placed, the latter being perforated intermediately of their ends to facilitate such a disposal of the clamping-plates. The outer ends of the clamping-plates E rest upon the cap-piece *b*, and at their inner ends said plates bear upon the base-flange of the rail A.

The portions of the clamping-plates E seated upon the rail A are preferably offset, as shown in Figs. 1 and 2, whereby a shoulder is formed on each of said plates, adapted to bear upon the outer edge of the base-flange

of the rail and hold said rail from lateral displacement when the nuts D are adjusted to draw the clamping-plates forcibly upon the rail-base and the cap-piece *b*.

In the production of metallic sheets such as *a* there are always slight inequalities or pits and projections thereon, which prevent the compression of a series of such sheets into a solid condition, so that the support afforded the track-rails A by the chairs which have been described is of a slightly-elastic nature, the resilience of the piled sheets as a mass being sufficient to absorb the percussive shocks resulting from the imposed weight and rapid movement of the rolling-stock traversing the railroad.

The crevices *c* surrounding the bodies of the bolts C when the latter are in place within the perforations of the cross-ties B are filled solidly with melted lead or sulfur, which will hold the bolts in place and exclude moisture therefrom, so that oxidation of the bolts is prevented.

The sheet-metal plates *a* composing each chair may be protected from corrosion by any preferred means, such as surface-coating them with zinc paint or metallic varnish.

I am aware that prior to my invention attempts have been made to provide a cushioned chair for railroad-rails, but the material being wood blocks or veneers of wood soon become useless for the desired purpose. I therefore do not claim a chair cushioned with one or more pieces of wood.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination with a perforated cross-tie, bolts secured therein, and nuts on the threaded upper ends of said bolts, of a rail-road-rail, a cushioned chair therefor, comprising a series of superposed, thin metallic sheets, a cap-piece therefor, and clamping-plates resting their heels on the cap-piece, and their toes upon the base-flange of the rail, said clamping-plates receiving the threaded ends of the bolts and being held in clamping condition by the nuts on said bolts, substantially as described.

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Witnesses:
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