W. MACLELLAN & J. P. SMITH.

RAILWAY-CHAIR.

No. 187,652. Patented Feb. 20, 1877.

Fig. 1

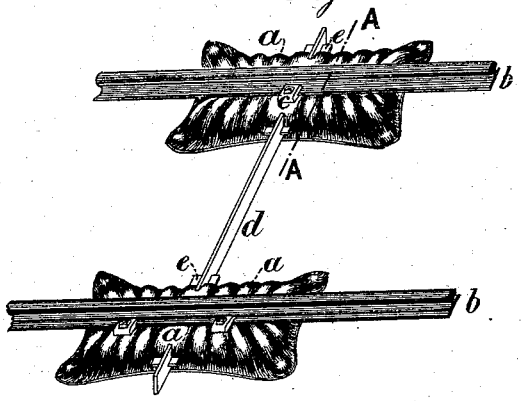


Fig. 2

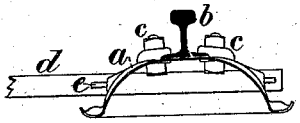


Fig. 3

Fig. 4

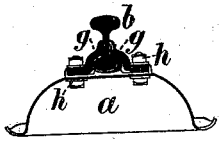
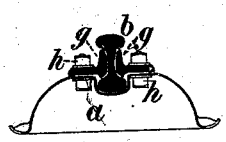


Fig. 5



Witnesses

George Dougall Witness.

John Charles Steeman

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UNITED STATES PATENT OFFICE.

WALTER MACLELLAN AND JOHN P. SMITH, OF GLASGOW, SCOTLAND.

IMPROVEMENT IN RAILWAY-CHAIRS.

Specification forming part of Letters Patent No. **187,652**, dated February 20, 1877; application filed December 29, 1876.

To all whom it may concern:

Be it known that we, WALTER MACLELLAN and JOHN PATERSON SMITH, of the city of Glasgow, in the county of Lanark, Scotland, have invented a new and useful Improvement in Railway-Sleeper Chairs; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying sheet of illustrative drawings, making a part of this specification, and to the figures and letters marked thereon—that is to say:

Our invention relates to that class of malleable-metal (usually iron or steel) sleeper-chairs known as "pot-sleepers," and has for its object to obtain the greatest amount of bearing-strength with minimum quantity of material; and consists in fashioning each chair with a series of flutings or embossations (hereafter, for convenience, called "embossations") so disposed that they radiate or stand in direction from the center or center line, or thereabout, toward the outer and lower bearing edges.

Figure 1 of the drawings herewith represents, in perspective, two sleeper-chairs under our invention, with portions of rails, fastenings, and tie-bar passing through said sleeper-chairs, all the parts being delineated in position. This modification has a flat upper surface, suited for the single-headed rail shown. Fig. 2 is a transverse section of Fig. 1, at about the line A A. Fig. 3 is a longitudinal section of a modification adapted for a single-headed rail, a bed-plate being under the rail, but having the embossations carried from the top center line down to near the lower bearing-edge. Figs. 4 and 5 are transverse sections, intended to illustrate the manner in which double-headed rails would be secured on our sleeper-chairs.

Referring to Figs. 1 and 2, *a* are the embossations in or on the sleepers. These, as will be seen, begin near the rail-bearing line, increase over the shoulder of the chairs, extend downward, and nearly die out again at the lower bearing-edges; *b*, rails; *c*, fastening bolts, nuts, and clips; *d*, tie-bar; *e*, gibs and cotters.

The portions of the sleepers against which the gibs and cotters bear are, it will be observed, embossed outward, so as to stand at a right angle to the plane of the gibs and cotters. In this way the gibs and cotters can be made rectangular, instead of having their edges beveled, as heretofore.

Instead of connecting sleeper-chairs by tie-bars passing through them, as above described, the tie-bars may be attached directly to the rails, by which means the gage of rail is correctly maintained.

Referring to Fig. 3, *a* are the embossations on the sleeper; *b*, rail, and *f* bed-plate. In this modification a bed-plate is beneficial; but when the loads are very light said bed-plate may be dispensed with.

Referring to Figs. 4 and 5, *a* are the embossed sleepers. In Fig. 4 the top of the chair is flat, and the double-headed rail *b* is held in position by double clips *g* and bolts and nuts *h*. In Fig. 5, however, the top of the sleeper has a groove to receive the rail, and also clips *g* and bolts and nut *h*, of the form shown.

It will be obvious that the lines of the series of embossations may be varied; but so long as they radiate from or near the top center, or top center line, to or toward the lower bearing-edges, they are embraced by our invention. It will further be obvious that in all the modifications the tops of the sleeper-chairs are angled, so as to give the proper cant or tilt to the rails.

The embossations may be formed by dies or in any other ordinary way; but in practice we have found dies operated to effect the dishing and embossations of one chair by one steady, yet quick, blow to answer well when the plate was heated.

The main advantages of our sleeper-chairs are strength, elasticity, durability, lightness, moderate first cost, economy in laying and maintenance.

We claim as our invention—

The malleable-metal railway-sleeper chairs, having embossations passing or radiating from, or from near, the top bearing-surface to or near the outer lower bearing-edges, substantially in the manner and for the purposes set forth.

WALTER MACLELLAN.
J. P. SMITH.

Witnesses:
GEORGE DOUGALL,
JOHN C. STEEDMAN.