(No Model.) 2 Sheets—Sheet 1.

E. S. M. FORD.

RAILWAY RAIL SUPPORT.

No. 418,002. Patented Dec. 24, 1889.

Fig. 1.

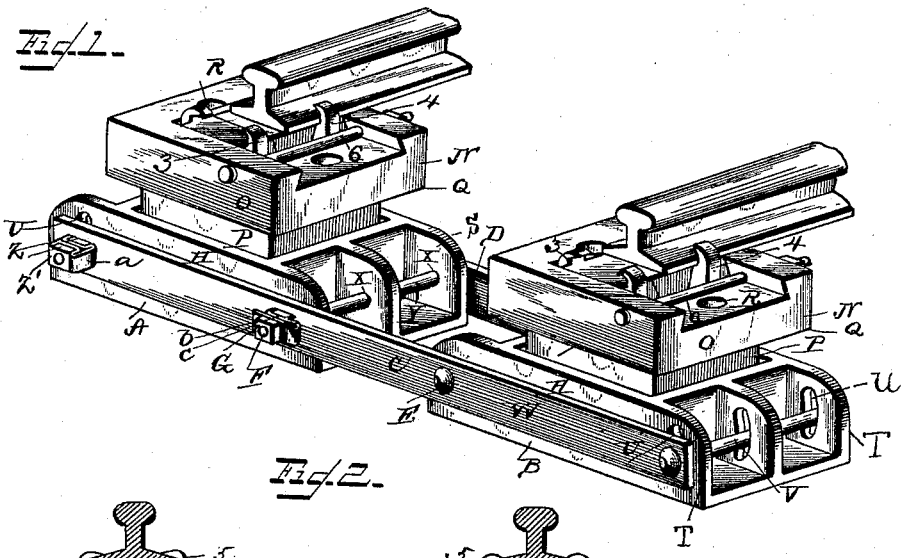


Fig. 2.

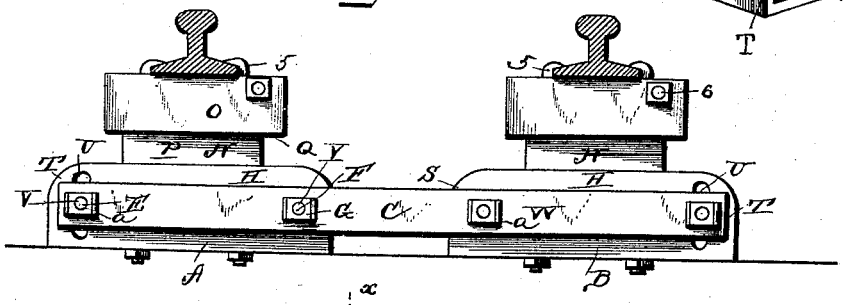


Fig. 3.

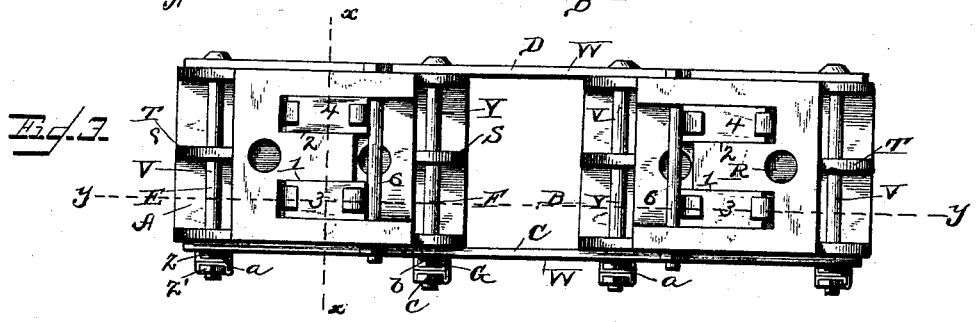
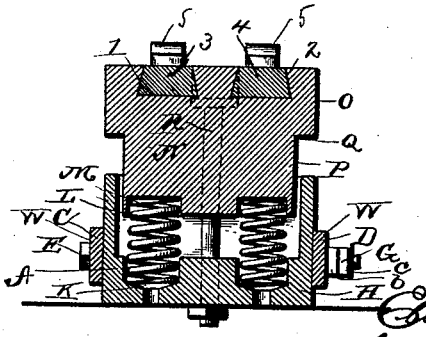


Fig. 4.



WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

E. S. M. FORD.

RAILWAY RAIL SUPPORT.

No. 418,002. Patented Dec. 24, 1889.

Fig. 5.

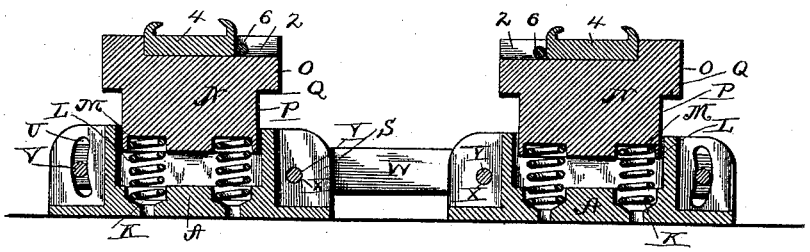


Fig. 6.

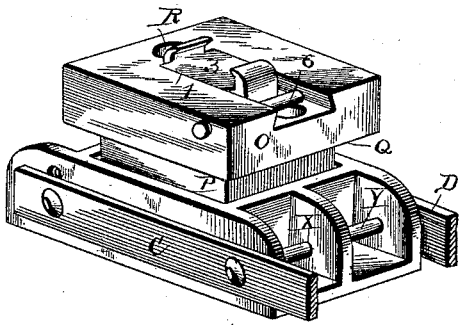


Fig. 7.

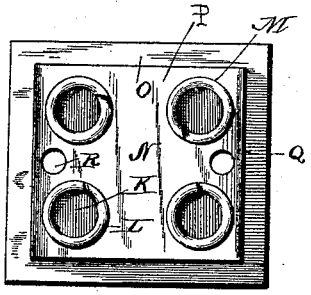
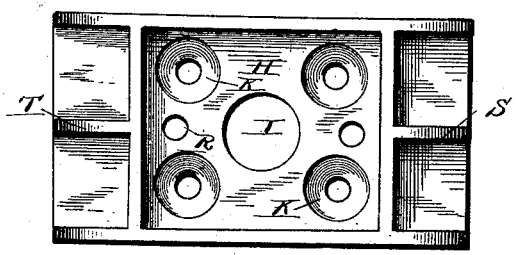


Fig. 8.



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UNITED STATES PATENT OFFICE.

ELISHA S. M. FORD, OF CHRISTIANSBURG, KENTUCKY.

RAILWAY-RAIL SUPPORT.

SPECIFICATION forming part of Letters Patent No. 418,002, dated December 24, 1889.

Application filed February 15, 1889. Serial No. 299,960. (No model.)

To all whom it may concern:

Be it known that I, ELISHA S. M. FORD, a citizen of the United States, and a resident of Christiansburg, in the county of Shelby and State of Kentucky, have invented certain new and useful Improvements in Railway-Rail Supports or Chairs; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to railway-rail supports or chairs, the objects of the invention being to produce a simple and efficient device of this class which shall combine a rail-bed, cross-tie, rail-support, rail-stay, and nut-lock, each made of metal and employed in connection with spiral springs in order to securely hold the rail in place and to reduce the jar or concussion incident to the passage of the rolling-stock over the road, and to thereby dispense with the wooden cross-ties now commonly used.

With these objects in view the invention consists in the construction and novel combination of parts, as will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a view in perspective of a section of a railway-track provided with my improved rail-beds, cross-ties, rail-supports, rail-stays, and nut-locks used in connection therewith. Fig. 2 is a side elevation showing the cross-tie, rail-bed, rail-supports, rail-stays, and nut-locks, the flanges of the rails being in place in the rail-stays. Fig. 3 is a plan view showing the improved device without the rails. Fig. 4 is a vertical sectional view of the improved device on the line *x x* in Fig. 3. Fig. 5 is a transverse sectional view taken on the line *y y* in Fig. 3, showing the spiral springs in section. Fig. 6 is a view in perspective of a modified form of the support, which is designed to be used to secure the rail to the rail-bed intermediate of the ends of the rail, in which instance a single rail-stay is employed instead of the two rail-stays used at the meeting ends of two rails. Fig. 7 is a bottom view of one of the rail-supports removed, showing the spiral springs in place therein; and Fig. 8 is a plan view of one of the rail-beds, showing the seats for the spiral springs and the dust-holes in the bottom of said rail-bed for the escape of dust.

Referring by letter to the accompanying drawings, A and B designate the rail-beds, the same being connected in pairs by the metal cross-ties C D, which are secured to the opposite side faces or edges of the rail-beds by bolts E F and nuts G. These rail-beds A and B are similar in construction, and each comprises a rectangular body portion H, provided with a central dust-opening I in its bottom, and four cups or seats K for the spiral springs L, the upper ends of which are embedded in seats or cups M in the lower face of the rectangular rail-support N. The upper portion O of the rail-support N projects at all sides over the lower portion P, so that a surrounding flange Q is formed thereby, which forms a stop and limits the descent of the support under pressure of the car on the track. The rail-support N is secured in place in the bed-plate by vertical bolts R, two or four being used, four at the meeting ends of the rails and two where the chair is employed intermediately of the ends of the rails.

The rail-beds are each provided with projecting end flanges S and T—three at each end—those T at the outer ends of the rail-beds being provided with upwardly and inwardly inclined slots U for the passage of the bolts V V, which connect the outer ends of the metal tie-bars W to the sides of the rail-beds. The end flanges S are not slotted, but are provided with bolt-holes X for the passage of the bolts Y, which are secured in place by nuts *b c*. The bolts V V are provided with right and left screw-threads, on which jam-nuts Z Z′ are screwed, an interposed nut-locking plate *a* being slipped upon the bolt and bent down against the edges of the nuts *b c*, after said nuts have been turned to place, to prevent the latter being turned or jarred loose by accident. In the drawings, Fig. 1, I have shown the nut-locking plate in both the initial and in the locked position, so that its application may be the more readily understood.

The upper faces of the rail-supports N are provided with dovetailed grooves 1 2, in which

are slid the rail-stays 3 4, the bases of which have beveled side edges to fit in the grooves. On their upper faces the rail-supports N are provided with upwardly inwardly bent hooks or claws 5, which are designed to embrace the base-flanges of the track-rail when the latter has been slipped to place.

The rail-stays 3 4 are secured in their places in their seats or grooves by bolt-rods 6, seated in bearings in the rail-support in front of said rail-stays, said bolt-rods being secured in place by nuts, which may also be provided with nut-locks, if desired.

The slots in the outer ends of the cross-ties virtually permit the rail-beds to adapt themselves to the inequalities of the road-bed at curves, inclines, or elsewhere.

The parts all being of metal, the expansion and contraction under heat and cold will be uniform, so that stability in structure is insured.

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

1. The combination, with the rail-bed and the rail-support provided in its upper faces with dovetailed grooves, of the rail-stays seated therein and provided on their upper faces with upwardly inwardly turned hooks or claws, substantially as specified.

2. The combination, with the rail-beds having the flanges at their outer ends provided with slots, of the ties secured to the sides of the rail-beds by bolts at the inner and outer ends of the rail-beds, substantially as specified.

3. The combination, with the rail-beds having vertically-disposed flanges at their inner ends and vertically-disposed slotted flanges at their outer ends, of the tie-bars connected to the inner and outer ends of said rail-beds by transverse bolts held in place by securing-nuts, substantially as specified.

4. A railway-rail support comprising parallel tie-bars, between which, at opposite ends, are hinged rail-beds, in which beds are seated spring-supported rail-supports provided with rail-stays, substantially as specified.

5. The combination of the rail-beds, the rail-supports fitting in said beds, the grooves in the rail-supports, the rail-stays fitting in said grooves, and the bolt-rods for retaining the stays in the grooves, substantially as described.

6. The combination of the rail-supports, the rail-stays fitted therein, having claws for engaging the rail, and the bolt-rods for securing the stays in place, substantially as described.

7. The combination of the rail-beds having the cups or seats therein, the rail-supports fitting therein, having cups or seats on the under side thereof, springs bearing in said seats of the beds and supports, and the rail-stays in the upper jaw of the supports, having claws for engaging the rails, substantially as described.

8. The combination of the rail-beds having the end flanges, the outer one being provided with slots and the inner flanges being provided with openings, the tie-bars connected to the flanges at the ends of the beds by rods or bolts, the rail-supports fitting in the beds, and the detachable rail-stops secured in the rail-supports, substantially as shown and described.

9. The combination of the rail beds having end flanges, the tie-bars connected to said end flanges, the rail-supports fitting in the beds, and the rail-stays having claws and fitting in the rail-supports, substantially as described.

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

ELISHA S. M. FORD.

Witnesses:
J. W. DAVIS,
G. H. DEMAREE.