

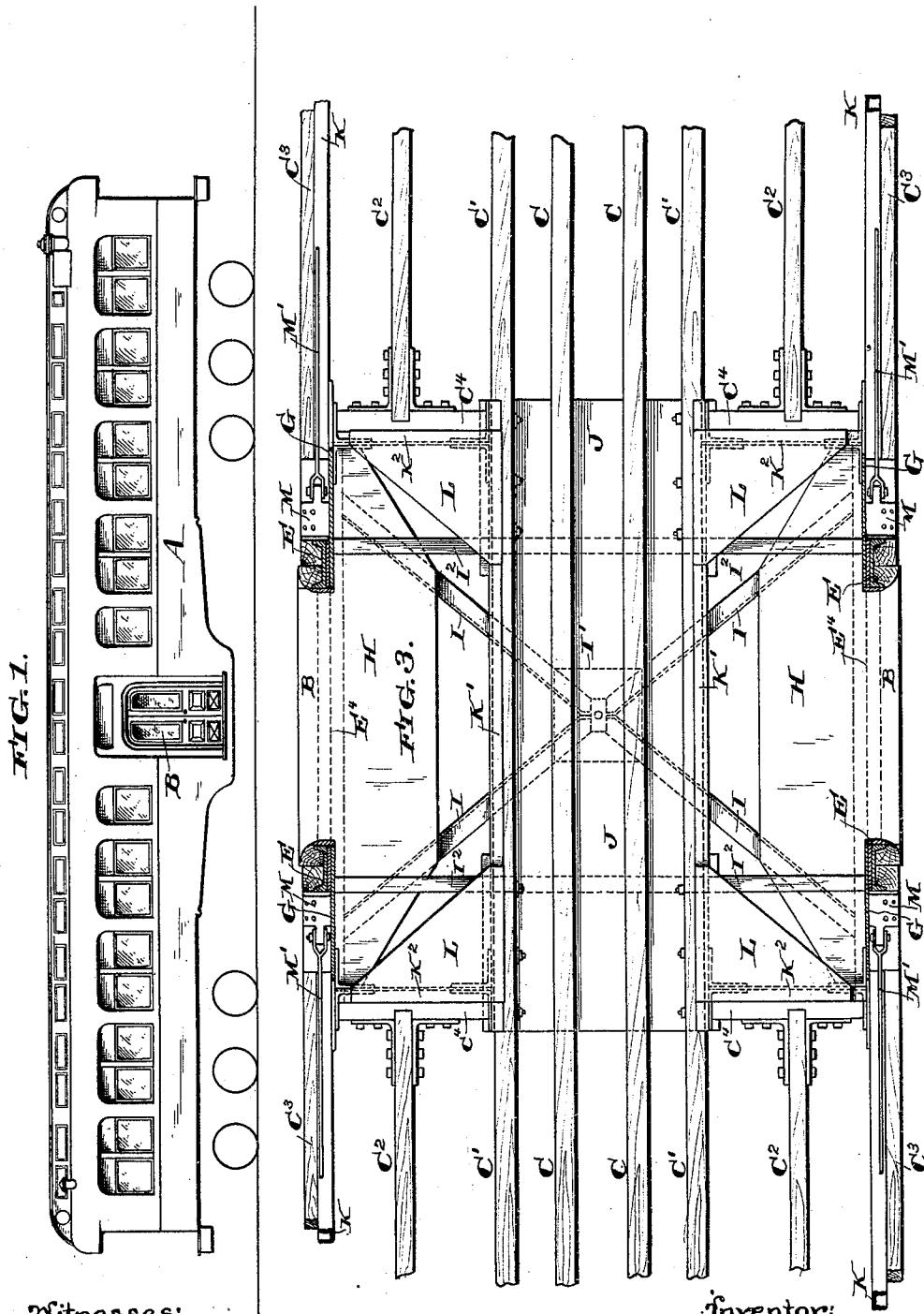
(No Model.)

3 Sheets—Sheet 1.

L. P. FARMER.  
RAILWAY CAR.

No. 446,984.

Patented Feb. 24, 1891.



## Fitnesse:

Henry D. Long  
Jesse Heller.

Inventor:

Leslie P. Farmer  
by his atty.  
Francis P. Chambers

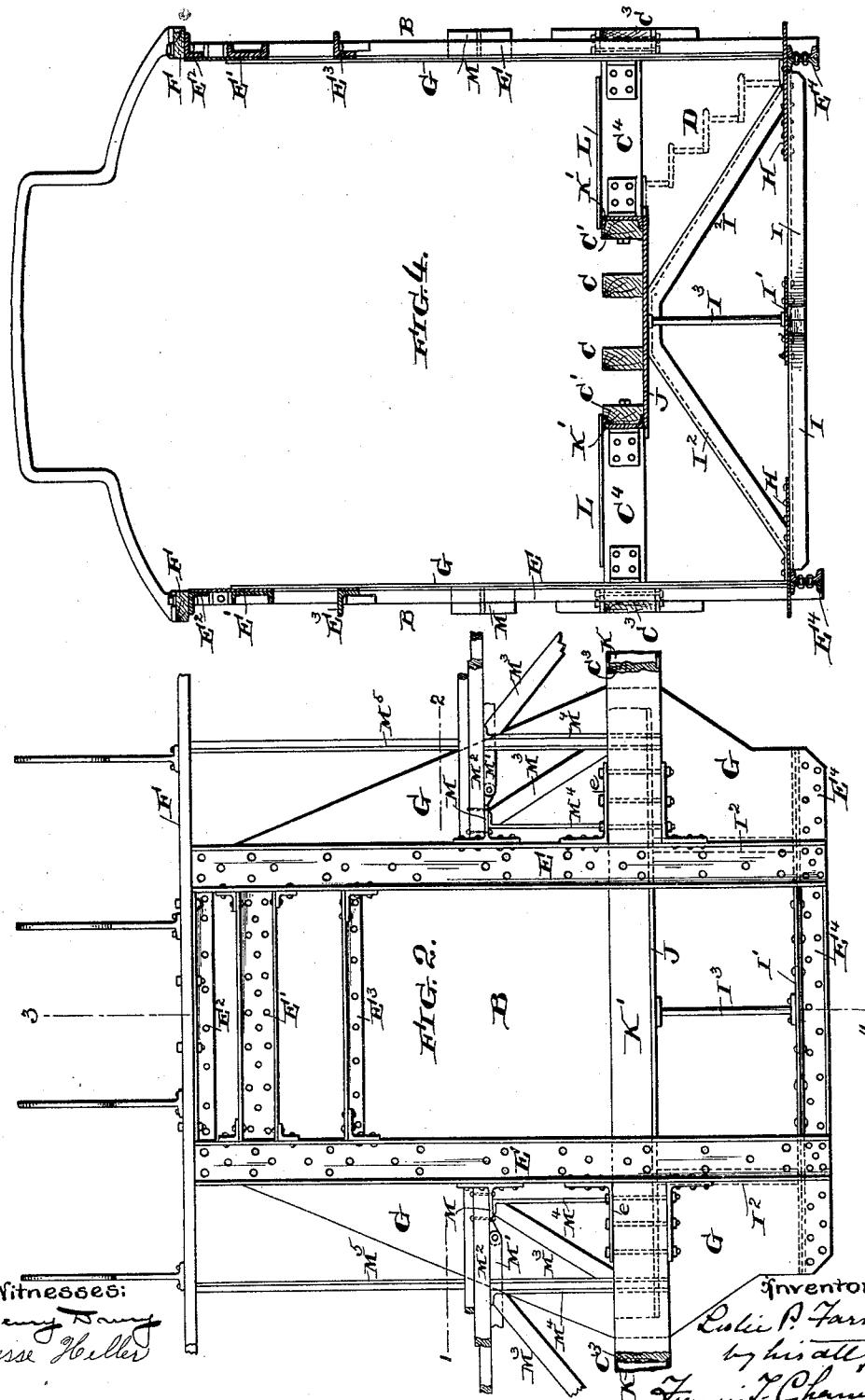
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L. P. FARMER.  
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Witnesses:

Henry T. May  
Jesse Heller

Inventor:

Lester P. Farmer  
by his Atty.—  
Francis J. Chambers

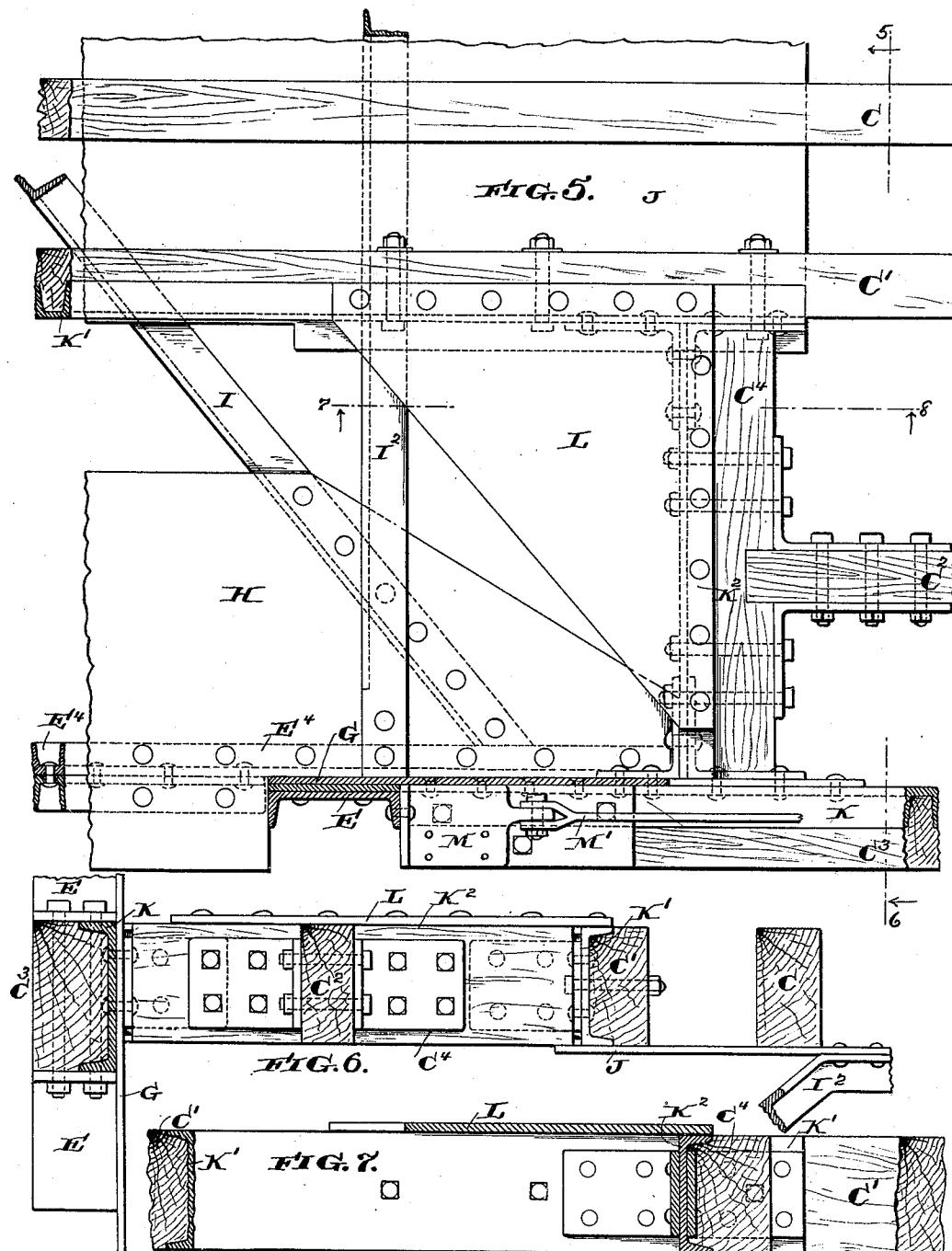
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# UNITED STATES PATENT OFFICE.

LESLIE P. FARMER, OF SOUTH ORANGE, NEW JERSEY.

## RAILWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 446,984, dated February 24, 1891.

Application filed December 29, 1890. Serial No. 376,028. (No model.)

To all whom it may concern:

Be it known that I, LESLIE P. FARMER, of South Orange, county of Essex, State of New Jersey, have invented a certain new and useful Improvement in Railway-Cars, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part of this specification.

10 My invention relates to the construction of railway-cars having doors at the sides and steps leading up into the interior of the car and of the general character of the car shown and described in my patent, No. 432,265, granted July 15, 1890; and the object of my present invention is to improve and strengthen the construction of such cars.

15 The nature of my improvements will be best understood as described in connection with the drawings in which they are illustrated, and in which—

20 Figure 1 is a side elevation of the car; Fig. 2, a side elevation of the door-frame, its accessories, and immediate connections. Fig. 25 3 is a plan view of the framing viewed from a section, say, on line 1 2 of Fig. 2, but with some of the merely ancillary parts omitted for clearness. Fig. 4 is a cross-sectional view on the line 3 4 of Fig. 2. Fig. 5 is an enlarged 30 plan view of some of the parts shown in Fig. 3. Fig. 6 is a cross-sectional view on line 5 6 of Fig. 5, and Fig. 7 a section on line 7 8 of Fig. 5.

25 A is the car; B, the side entrance; C C' C' C<sup>2</sup> C<sup>2</sup> C<sup>3</sup> C<sup>3</sup>, the longitudinal sills of the car-body upon which it is erected. The outer sills C<sup>3</sup> and one or more of the adjacent inner sills, as C<sup>2</sup>, are intersected, as shown, and steps D lead up between their divisional parts 40 to the floor of the car. Between and to the ends of the outer divisional sills C<sup>3</sup>, I secure a door-framing made up of vertical members of iron E E, a lower horizontal compression member E<sup>4</sup>, and one or more upper horizontal compression members, as shown, E' being the main one, supplemented by additional braces E<sup>3</sup> E<sup>2</sup>. Preferably the lower member E<sup>4</sup> extends out beyond the vertical members, as shown. To the vertical members E, and preferably also to the projecting ends of the member E<sup>4</sup>, I secure brace-plates G G, formed substantially as shown, so as to be widest at the

level of the sills C<sup>3</sup>, to which said plates are firmly secured, the vertical members E of the frame being also attached directly to the ends of the sill, as by angle-straps, as shown. The frames are secured opposite to each other and should be braced together at the bottom. This bracing I accomplish in two ways: first, by riveting horizontal inwardly-projecting plates H to the lower member of the frames and by riveting to these plates intersecting cross-bars I I I I, which should be secured at the center, as by riveting them, to a plate I', and braced, as by a brace-rod I<sup>2</sup>, extending from the intersection of the cross-bars to the frame of the car above. The other braces provided are shown at I<sup>2</sup> I<sup>2</sup> and are secured to the lower members of the frames and extend transversely across the car to the center of the car-body, an iron plate J being preferably secured to the under side of the continuous longitudinal sills, and the braces I<sup>2</sup> and stay-rod I<sup>3</sup> being secured to said plate.

20 Instead of connecting the intercepted ends of the sill-sections C<sup>2</sup> by an iron stirrup passing beneath the steps D, as in my former patent, or in addition to such a stirrup, I provide cross-sills C<sup>4</sup> C<sup>4</sup>, which are firmly secured to the outer sills C<sup>3</sup> and to the first continuous 80 sill, as C', and to these cross-sills I secure the ends of the sill-sections C<sup>2</sup>, as shown, and to make this structure firm and secure I provide a triangular plate L, which is firmly secured to the cross-sill C<sup>4</sup> and the adjacent continuous 85 sill C', as shown, and I would here call attention to the fact that for the purpose of strengthening the parts described and affording a better hold for bolts and rivets I re-enforce the sills C', C<sup>4</sup>, and C<sup>3</sup> by channel-iron facings, as K' 90 K<sup>2</sup> K, the channel-irons K' being secured to the sills C' C', and the plate J riveted to the said channel-irons, this construction, in combination with the cross-braces already referred to, fastening the side frames together 95 and effectually preventing displacement or distortion. I also prefer, in connection with the framing above described, to strengthen the body of the car by ties and truss-framing, as indicated at M, M', M<sup>2</sup>, M<sup>3</sup>, and M<sup>4</sup>; but this 100 framing, forming no part of my present invention, need not be further described in this application.

Having now described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a railway-car having its outer longitudinal sills, as  $C^2$  and  $C^3$ , interrupted for the admission of a door and steps, as described, an iron frame, as  $E E E' E'$ , secured between and to the ends of the outer sill-sections  $C^3$ , in combination with brace-plates, as  $G G$ , secured to the upright members of said frame and extending back along the sills  $C^3$ , to which they are also secured, substantially as and for the purpose specified.
2. In a railway-car having its outer longitudinal sills, as  $C^2$  and  $C^3$ , interrupted for the admission of a door and steps, as described, an iron frame, as  $E E E' E'$ , having its lower member  $E^4$  extending out beyond the upright members secured between and to the ends of the outer sill-sections  $C^3$ , in combination with brace-plates, as  $G G$ , secured to the upright members of said frame and extending back along the sills  $C^3$ , to which and to the projecting ends of  $E^4$  they are also secured, substantially as and for the purpose specified.
3. In a railway-car having its outer longitudinal sills, as  $C^3 C^2$ , interrupted, as described, for the admission of a door and steps, an iron frame, as  $EEE' E'$ , secured between the sections of the outer sill, brace-plates, as  $G$ , secured to the frame and to the outer sill-sections, substantially as described, sills, as  $C^4$ , extending transversely from sill-sections  $C^3$  to a continuous longitudinal sill, as  $C'$ , to support the ends of the inner intersected sill-sections, as  $C^2 C^3$ , and stiffening-plates, as  $L$ , secured to sills  $C^4$  and  $C'$ , all substantially as and for the purpose specified.
4. In a railway-car having its outer longitudinal sills, as  $C^3 C^2$ , interrupted, as described, for the admission of a door and steps, iron frames, as  $E E E' E'$ , secured opposite to each other between and to the outer intersected sills, in combination with plates, as  $H$ , secured to the lower members of the frames and projecting horizontally inward, and cross-braces  $I I$ , &c., secured to the ends of plates  $H$ , all substantially as and for the purpose specified.
5. In a railway-car having its outer longi-

tudinal sills, as  $C^3 C^2$ , interrupted, as described, for the admission of a door and steps, iron frames, as  $E E E' E'$ , secured opposite to each other between and to the outer intersected sills, in combination with plates, as  $H$ , secured to the lower members of the frames and projecting horizontally inward, cross-braces  $I I$ , &c., secured to the ends of plates  $H$ , and a stay-rod, as  $I^3$ , securing the intersecting center of braces  $I I$ , &c., to the car-body, all substantially as and for the purpose specified.

6. In a railway-car having its outer longitudinal sills, as  $C^3 C^2$ , interrupted, as described, for the admission of a door and steps, iron frames, as  $E E E' E'$ , secured opposite to each other between and to the outer intersected sills, in combination with stays, as  $I^2$ , extending upward from the bottom of the frames to the car-body, to which they are secured, all substantially as and for the purpose specified.

7. In a railway-car having its outer longitudinal sills, as  $C^3 C^2$ , interrupted, as described, for the admission of a door and steps, iron frames, as  $E E E' E'$ , secured opposite to each other between and to the outer intersected sills, in combination with continuous sills, as  $C' C'$ , re-enforced by angle-bars  $K'$ , a connecting-plate  $J$ , and transverse braces  $I^2$ , secured to the frames and plate  $J$ , all substantially as and for the purpose specified.

8. In a railway-car having its outer longitudinal sills, as  $C^3 C^2$ , interrupted, as described, for the admission of a door and steps, iron frames, as  $E E E' E'$ , secured opposite to each other between and to the outer intersected sills, in combination with continuous sills, as  $C' C'$ , re-enforced by angle-bars  $K'$ , a connecting-plate  $J$ , cross-braces  $I I$ , uniting the frames, a rod  $I^3$ , extending from the intersection of the cross-braces to plate  $J$ , and transverse braces  $I^2$ , secured to the frames and plate  $J$ , all substantially as and for the purpose specified.

LESLIE P. FARMER.

Witnesses:

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