

**No. 650,85€**

Patented June 5, 1900.

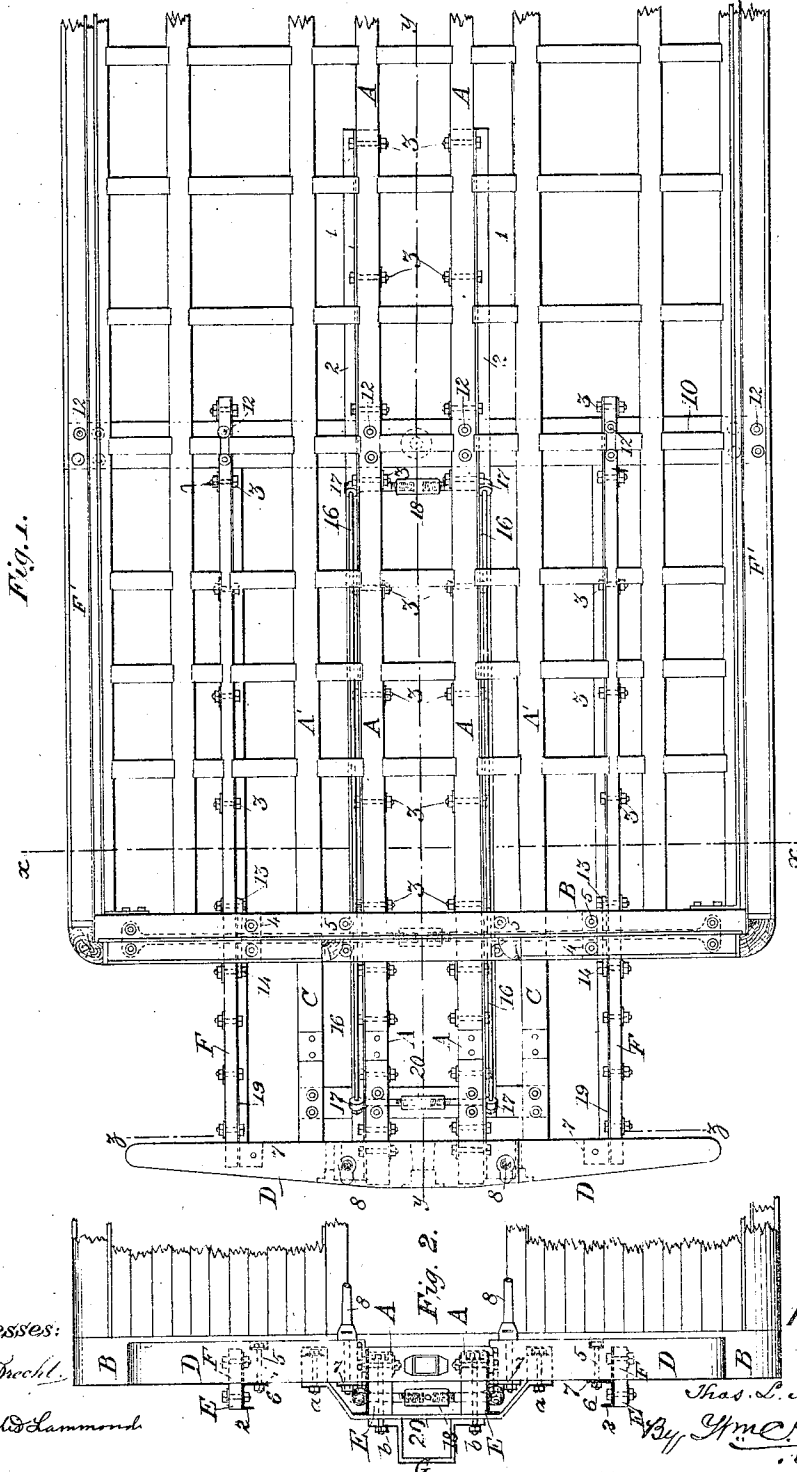
**T. L. McKEEN.**

## RAILWAY CAR CONSTRUCTION.

(Application filed Dec. 13, 1897.)

(No Model.)

3 Sheets—Sheet 1.



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3 Sheets—Sheet 2.

(No Model.)

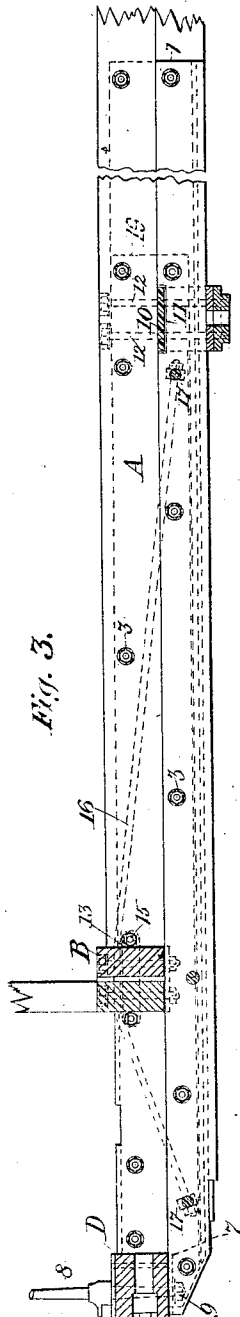


Fig. 3.

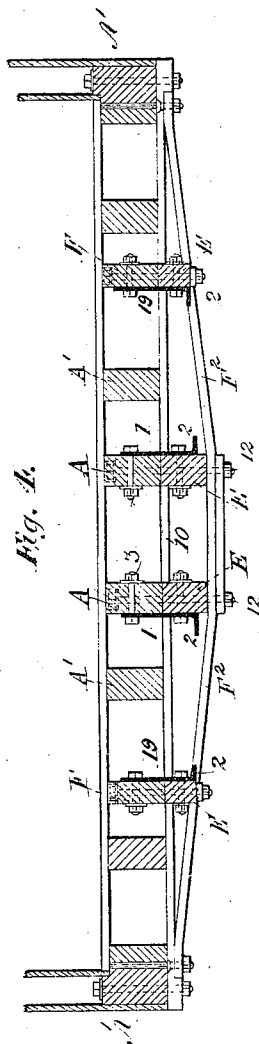


Fig. 4.

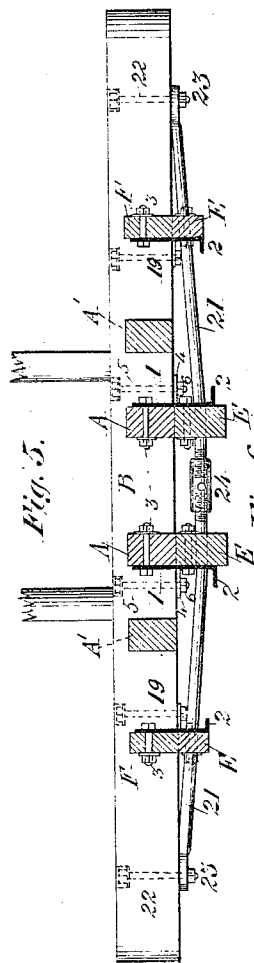


Fig. 5.

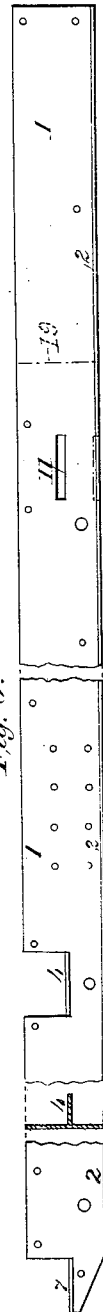


Fig. 6.

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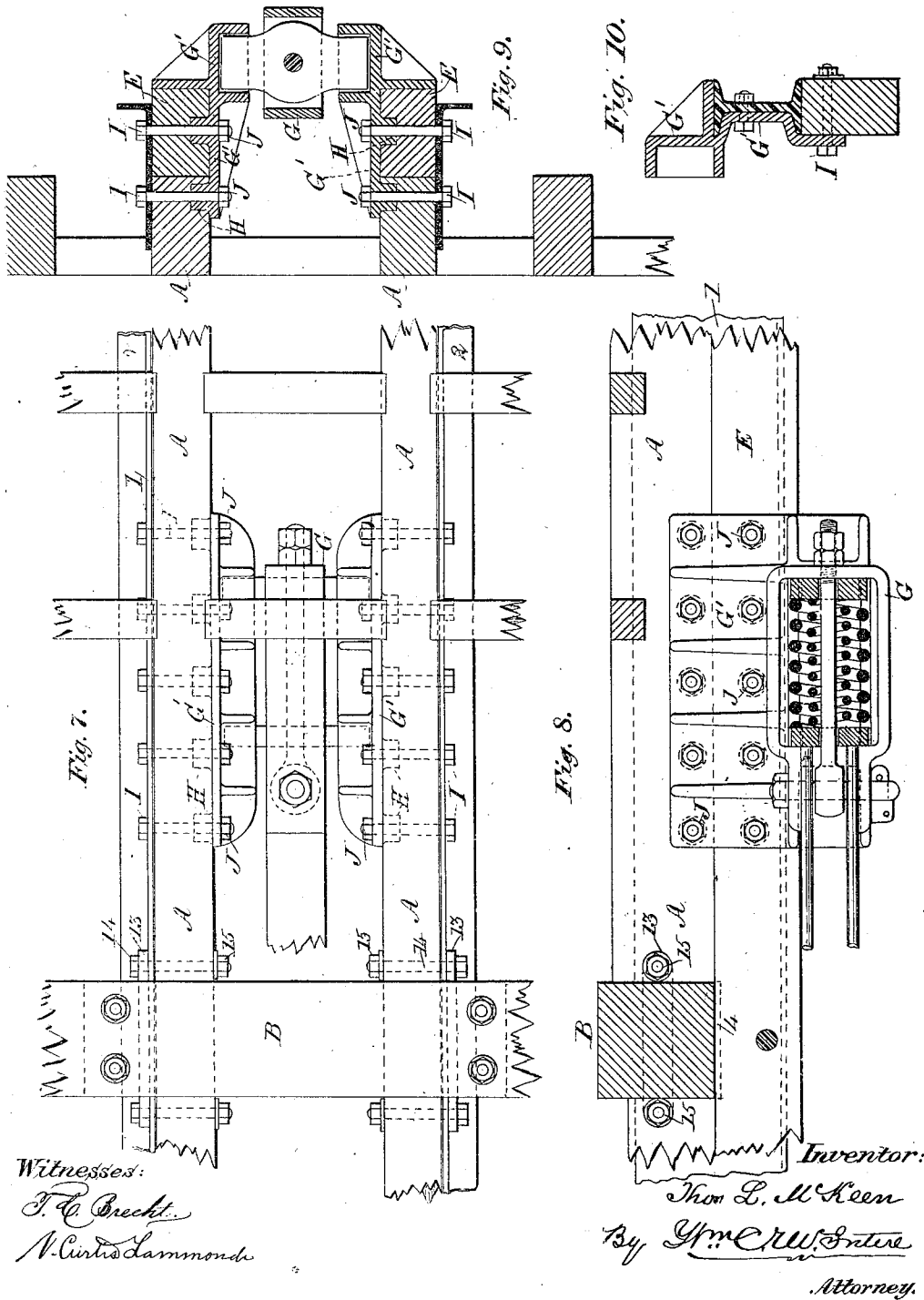
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3 Sheets—Sheet 3.



# UNITED STATES PATENT OFFICE.

THOMAS L. MCKEEN, OF NEW YORK, N. Y.

## RAILWAY-CAR CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 650,859, dated June 5, 1900.

Application filed December 13, 1897. Serial No. 661,693. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS L. MCKEEN, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Railway-Car Construction; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in the construction of railroad-cars.

It has for its object to secure great strength and at the same time the proper elasticity in the completed car; and with these ends in view my invention consists in the particular construction and arrangement of parts hereinafter more fully described and claimed.

In order that those skilled in the art may fully understand my improved car, I will proceed to describe the construction of the same, referring by letters and numerals to the accompanying drawings, in which—

Figure 1 is a top or plan view of one end of the frame or support for the car body and platform. Fig. 2 is an end view. Fig. 3 is an enlarged longitudinal section on the line *yy* of Fig. 1, the horizontal dotted lines representing metal plates, which are shown in cross-section at Fig. 5. Fig. 4 is a vertical cross-section on line *xx* of Fig. 1. Fig. 5 is a similar view on line *zz* of Fig. 1. Fig. 6 is a side elevation and a section through the flanges of one of the strengthening steel plates used in the construction. Fig. 7 is a top or plan view of attachment of draft-rigging. Fig. 8 is a side view, partly in section, of the same. Fig. 9 is a cross-section showing the attachment of the draft-rigging, and Fig. 10 is a detail sectional view showing the draft-rigging attachment to I-beams in lieu of the ordinary longitudinal wooden sills.

Similar letters of reference and numerals indicate like parts in the several figures of the drawings.

A A are the central longitudinal car-body sills.

A' A' are longitudinal side sills arranged a suitable distance outside of the car-body sills A and parallel therewith.

B is the end sill of the car, and it is framed onto and connected in the usual manner with the central and side sills A A', which extend beyond said end sill and constitute platform-sills C C.

D is the end sill of the platform, framed in the usual way to the side sills A' A'.

E E are the draft-timbers, to which the draft-rigging is secured, and F designates the exterior platform-sills of the platform, which constitute supports for the steps.

1 1 are metal plates of any suitable thickness, preferably three-eighths of an inch, and are formed with or without bottom flanges 2, (see Fig. 6,) which tend to stiffen the plates. These plates extend any suitable distance longitudinally and are sufficiently deep to embrace or cover the sides of the car-body sills A and the underlying draft-timbers E. At the point where the plates 1 pass under the end sills B they are cut and turned down to form horizontal wings 4, which lie under and support the said sills B, and the extreme ends of said plates are cut and turned down to form horizontal wings 7, which lie under and support the platform end timbers D. (See Fig. 6.) Horizontal screw bolts and nuts 3 are employed to secure the plates in position against the sides of sills, and vertical bolts and nuts 5 6 are employed to secure the wings 4 and 7 in their supporting positions under the end timbers B and D, or, if thought desirable, the rail-post 8 and a nut 9 may be employed to secure the wing 7 in position. At the point where the "fitch-plates" 10 are located the plates 1 and 19 are slotted, as shown at 11, Fig. 6, to permit the passage of the fitch-plates, which are secured in the usual manner by screw-bolts 12. (See Fig. 1.)

In order to still further strengthen the connection of the plates 1 at their intersection with the end sill B, a plate 13, of suitable width and thickness, passes through the end sill, and lying against the metal plate 1 is firmly secured in position by horizontal screw-bolts 14 passing through the plate 1 and sill A and fastened by nuts 15.

The truss-rod 16, of ordinary construction and arrangement, is secured at each end to eyebolts 17, which pass through the plates 1 and subsills E, and are drawn together and firmly held by turnbuckles 18, thus holding

the plates 1, timbers, and sills A and E from spreading.

The exterior platform-sills F extend from the platform end timber D back under the cross-timbers of the car-frame, as clearly shown at Fig. 1. A plate 19, similar to plate 1, is secured against the inside of the exterior platform-sills F and is formed with wings similar to the wings 4 and 7 of the plate 1, and, like said wings, lie under, are secured to, and support the end sill B and the platform end timber D, bolts and nuts 3, 5, and 6, similar to those already described, being employed to secure the plate and its wings in position. At Fig. 3 the dotted lines show the plate 1 secured to the car-body sills A and draft-timbers E, and the plate 19 to the step-sills, the former extending farther to the rear than the latter, the double row of dotted lines near the bottom of said figure representing the strengthening-flanges along the bottom edges of the plates 1 and 19.

20 is a brace-plate under the platform to prevent lateral strain of the latter. This brace is secured in position by vertical screw-rods and nuts *a*, as shown in Fig. 2, and by reason of its employment I am enabled to dispense with the ordinary carry-iron block, such as used in the Miller platform, and thus permitting the bringing forward of the draft-timbers or subsills E under the platform end timber D, the auxiliary securing-bolts *b*, passing through the ordinary "carry-iron" G, of any suitable construction, the plate 20, the subsills or draft-timbers E, and the central car-body sills A bind all together most securely.

21 is a truss-rod which I employ to assist in the support of the car end sill B, which is subjected under the present heavy weight of the continuous platform to great vertical strain. This truss-rod in two parts passes through the plates 1 and 19, the draft-timbers E, and step-timbers F, and is secured at the outer ends to the end sill B by screw-bolts 22 and nuts 23. The inner ends of the truss-sections are threaded and are connected by a turnbuckle 24, by means of which they are drawn together in an obvious manner.

G is the draft-rigging secured to the sills A A, and instead of the ordinary method of securing the rigging by means of bolts passing vertically through the floor of the car, the wooden sills, and draft-timbers I form the draft-rigging with side plates G' G', adapted to lie against the inside faces of the sills A and subsills E, and I provide the side plates with nipples H, which enter recesses formed in the timbers and constitute dowels, which when the bolts I, which pass through the plates 1, timbers A E, and draft-rigging plates G', are securely fastened by nuts J, a very rigid and strong connection of the draft-rigging is made.

While I prefer to use the construction shown at Fig. 9, as it is especially adapted to my otherwise-improved car construction, it

will be understood that my improved construction of draft-rigging, which involves the generic idea of connecting it by lateral rather than vertical bolts, may be employed with what is known as the "I-beam sills" by constructing the side plates G' to conform to the contour of the I-beams, as clearly shown at Fig. 10. The draft-rigging in every other particular, except in respect to the manner in which it is secured in position, may be constructed in the ordinary or any preferred manner.

F<sup>2</sup> is a body-bolster secured to the side timbers of the car-body by any suitable bolts and held against any longitudinal movement by shoulders near each end of the flitch plate, as clearly shown at Fig. 4.

Having described the details of my improved car construction, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with car-body sills A, end sill, platform-sills, end timber, and subsills or draft-timbers, the metal plates 1 formed with horizontal wings or flanges 4 and firmly secured in position by bolts and nuts, substantially as and for the purpose set forth.

2. In combination with the car-body sills A, end sill, platform-sill, end timber and subsills, the metal plates 1 and 19 formed with the horizontal wings or flanges 4 and 7, and secured in position by screw-bolts and nuts 3, 5 and 6, and rail-post 8 and nut 9, substantially as shown and described.

3. In combination with the car-sills A, side sills A', extended to constitute platform-sills C', end sills D, and step-timbers F, the metal plates 1 embracing and strengthening the sills A, and draft-timbers E, the metal plate 19 embracing and strengthening the step-timbers F, and subsills E, and the tie-plates 13, arranged as described, and bolted horizontally as and for the purpose set forth.

4. In combination with the car-body sills A, end sills B, platform-sills and metal plates 1 and 19 having horizontal wings 4 and 7 constructed and arranged as described, the truss-rods 16, eyebolts 17 and turnbuckle 18, substantially as and for the purpose set forth.

5. The brace-plate 20 secured by bolts *a* to the side sills A', and engaging and supporting the draft-timbers E, in combination with the carry-iron G secured in position by the bolts *b*, substantially as and for the purpose set forth.

6. In combination with the car-sills A, draft-timbers E, step-sills F, car end sill B, platform end timber D, and the metal plates 1 and 19, embracing and strengthening the car-sills and draft-timbers, and the step-timbers and subsills respectively, the truss 21, secured at the outer ends of the car-frame and having the inner ends threaded and connected by a turnbuckle 24, substantially as and for the purpose set forth.

7. In combination with the body-bolsters F<sup>2</sup>, sills, step-timbers and strengthening-plates 1 and 19, the flitch-plates 10 passing horizon-

tally through the timbers and strengthening-plates and secured in position by vertical bolts substantially as and for the purpose set forth.

8. The plates 1 provided with horizontal  
5 wings and fitch-plate openings and adapted to be secured in position by horizontal and vertical bolts, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS L. McKEEN.

Witnesses:

N. CURTIS LAMMOND,  
WALLACE MURDOCK.