2 Sheets—Sheet 1.

C. DAVENPORT.

Car Truck.

No. 3,697. Patented Aug. 10, 1844.

Fig. 1.

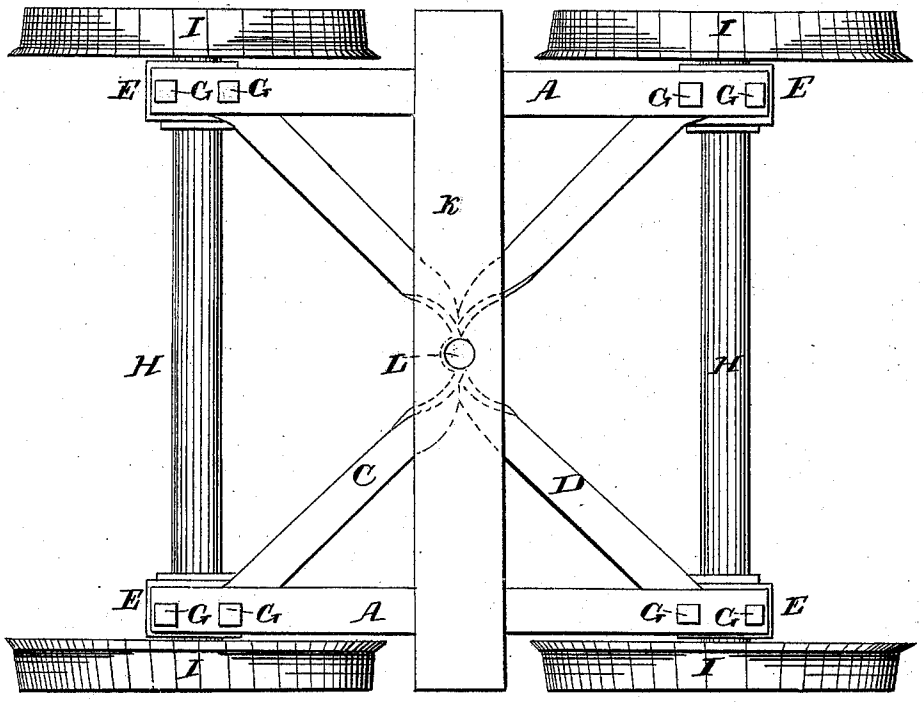
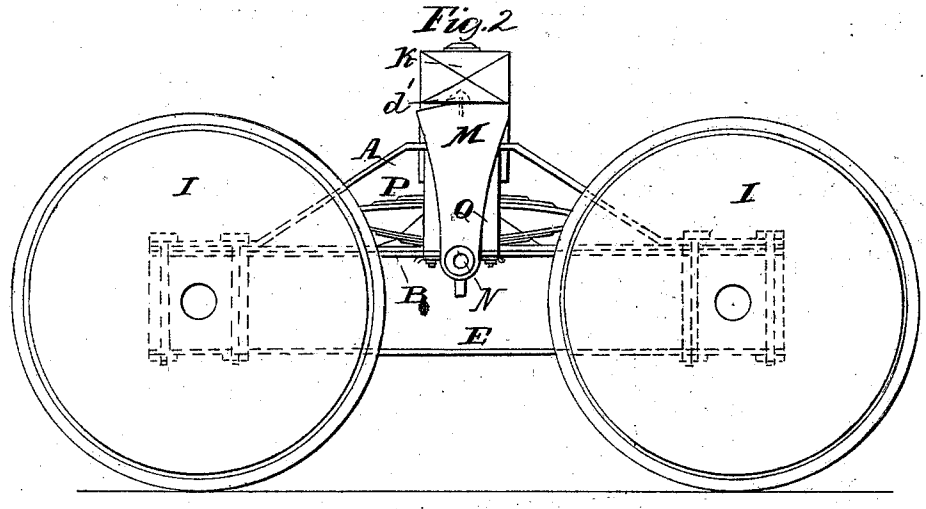


Fig. 2.



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Car Truck.

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Fig: 3.

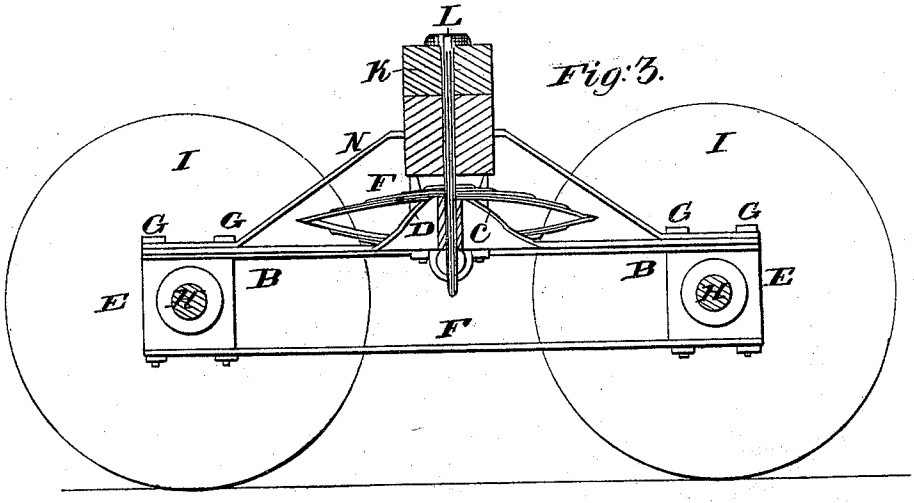
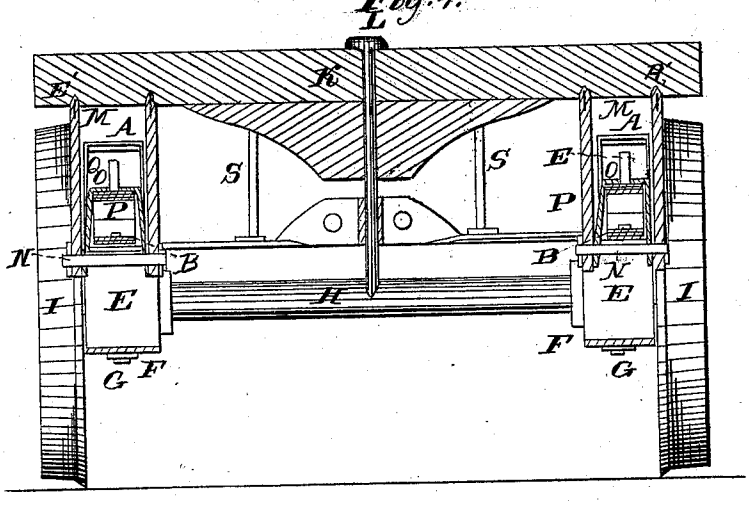


Fig: 4.



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UNITED STATES PATENT OFFICE.

CHARLES DAVENPORT, OF CAMBRIDGEPORT, MASSACHUSETTS, ASSIGNOR TO DAVENPORT & BRIDGES.

RAILROAD TRUCK-FRAME.

Specification of Letters Patent No. 3,697, dated August 10, 1844.

To all whom it may concern:

Be it known that I, CHARLES DAVENPORT, of Cambridgeport, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in the Manner of Making Truck-Frames of Eight-Wheel Passenger or other Carriages Used upon Railroads, and that the following description and accompanying drawings, taken in connection, constitute a full and exact specification of my invention.

Figure 1 of the drawings above mentioned represents a top view or plan of one of my improved truck frames, having the wheels and axles and body beam applied to it. Fig. 2 is a side elevation. Fig. 3 is a central longitudinal and vertical section, and Fig. 4 is a transverse central and vertical section.

A, A, Figs. 1, 2, 3, 4, represent the arched bars of the side trusses. They consist of two long, thin and wide bars of plate iron (about three inches or more wide, and one inch thick) bent into the shape as seen in the drawing. Each of them is placed directly over a flat and straight tie bar B, which extends from one end to the other, as seen in Fig. 3. These parts so arranged, receive between their ends the ends of diagonal cross bars or braces, C, C, D, D (formed of flat iron bars, of the width of the bars A, B) which are united at their centers by being welded, bolted, or riveted together. The bars so composing what may be considered as side trusses and diagonal cross braces, rest at their ends upon four blocks or metallic pedestals E, E, E, E, which receive the bearings or boxes for the axles to run in. Another flat tie bar F, extends from the underside of one of the pedestals to that of the other on the same side of the frame (there being two bars F, F,) and the whole is secured together by eight bolts G, G, G, &c., (having screws and nuts) which pass down through the ends of the several bars, and the pedestals, and on each side of the journals of the axles H, H, in the positions represented in the drawings.

From the above it will be seen that there are two bolts to each pedestal; and that this number is all that is requisite for the full security of the bars and pedestals together. In the ordinary truck frames as constructed of wood, and formed of strong beams, a great many bolts become necessary for the lateral and cross bars, which (bars) are arranged so as to cross each other at right angles. In the construction of the simplest wooden frame of the ordinary kind I have been obliged to make use of as many as forty bolts, besides a great many iron straps and various other devices for securing its parts. The peculiar strains to which such a frame is subjected very soon rack and derange it to a great degree. In the ordinary truck frame the wheels run on the inside of the side bars of the frames; the housings and springs being applied to such side bars.

My improved frame is arranged entirely between the wheels—that is to say, the axles extend through the pedestals, and have the wheels I, I, I, I, disposed on the outside thereof. The body beam, or that upon which the body of the carriage rests, is seen at K. It is bolted firmly to the underside of the carriage near one end thereof, and is kept in place upon the truck frame by a transom bolt L, which passes downward through its center, and between the diagonal cross braces, which previously to being welded or confined together at their middle parts, are bent upward vertically and around a piece of round bar iron, so as to form when the bars are joined, a circular cavity or hole for the reception of the transom bolt which passes and extends through the same as seen in Fig. 4. The truck frame thus turns upon the transom bolt as a center. The body beam K, rests and moves near each end, upon two sectoral supports M, M, arranged on the sides of the truss frames as seen in Fig. 4, and shaped as seen in Fig. 2. They extend somewhat, or a sufficient distance, above the truss frames and are jointed at their lower ends, by means of a bolt N, to an inverted stirrup O, which passes over and rests upon the upper part of a double elliptic spring P, which is placed within the truss frame, and rests upon the top of the bar B, thereof. Two rectangular bands Q, R, are passed entirely around the central part of each truss frame, the object of the same being to transfer the strain (or a portion thereof) of the elliptic spring from the tie bar B, to the arched bar A, of the truss. In order to keep each of the sectoral bars in its vertical position underneath the body beam, a small pin R′, may be inserted in the top thereof, and extend within an elongated cavity formed in the underside of the body beam, the same being represented

by dotted lines in the side elevation. Suitable chains or rods S, S, may be jointed to the body beam and the diagonal braces for the purpose of keeping the carriage down upon the truck frame or preventing it from rising too far above the same.

The above method of making a truck frame enables me to effect a very great saving in the cost of constructing such part of a railway carriage. The truck frames of an eight wheel long car can be manufactured on the above plan so as to effect a saving in expense in labor and materials of about one hundred dollars, and in weight of about twelve hundred pounds. Besides, they are much stronger, more simple in construction, and having but four points, as it were, of joining, are very much less liable to be racked and loosened by lateral strains, than are the truck frames of the ordinary kind.

I do not claim making the truck frame of a rail road car or carriage with side truss frames united with diagonal braces as this has been known before, nor do I claim making these frames of iron or other metal; but

What I do claim as my invention and desire to secure by Letters Patent, is—

Making the trusses of the truck frame that are united and braced together by means of twisted diagonal plates C, C, D, D, of arch plates A, A, and tie bars B, B, F, F, so arranged and bolted together as to embrace and secure the pedestals as described; by which arrangement I obtain the necessary strength with a greatly reduced weight and employ the pedestals for the double purpose of holding the boxes of the wheel axles and connecting the tie bars of the trusses.

CHARLES DAVENPORT.

Witnesses:
R. H. EDDY,
CALEB EDDY.