No. 648,737. Patented May 1, 1900.

# C. E. FRYE.

## CAR TRUCK.

(Application filed Mar. 8, 1900.)

(No Model.) 3 Sheets—Sheet 1.

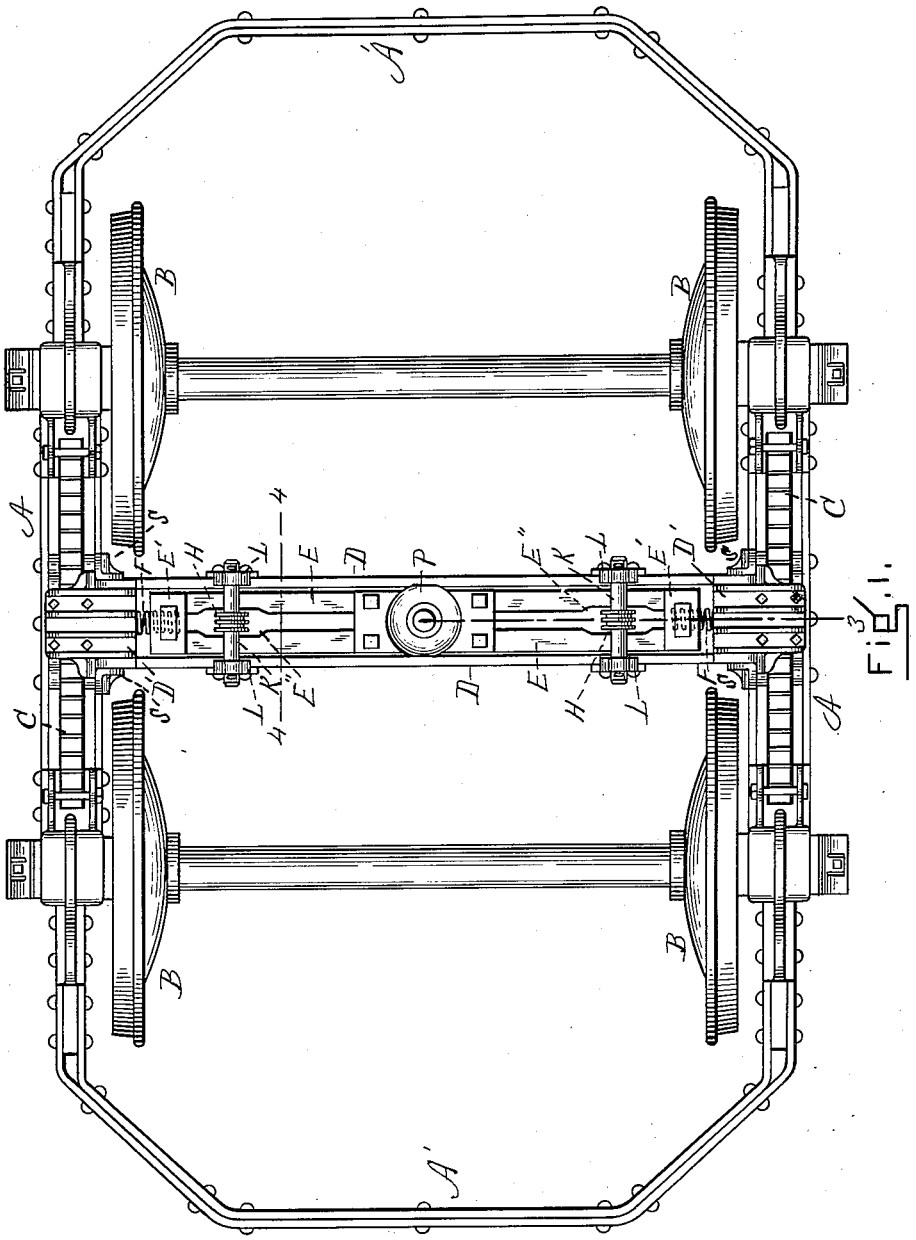


Fig. 1.

WITNESSES
A. A. Ronney.
E. B. Small.

INVENTOR
Charles E. Frye.
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## CAR TRUCK.

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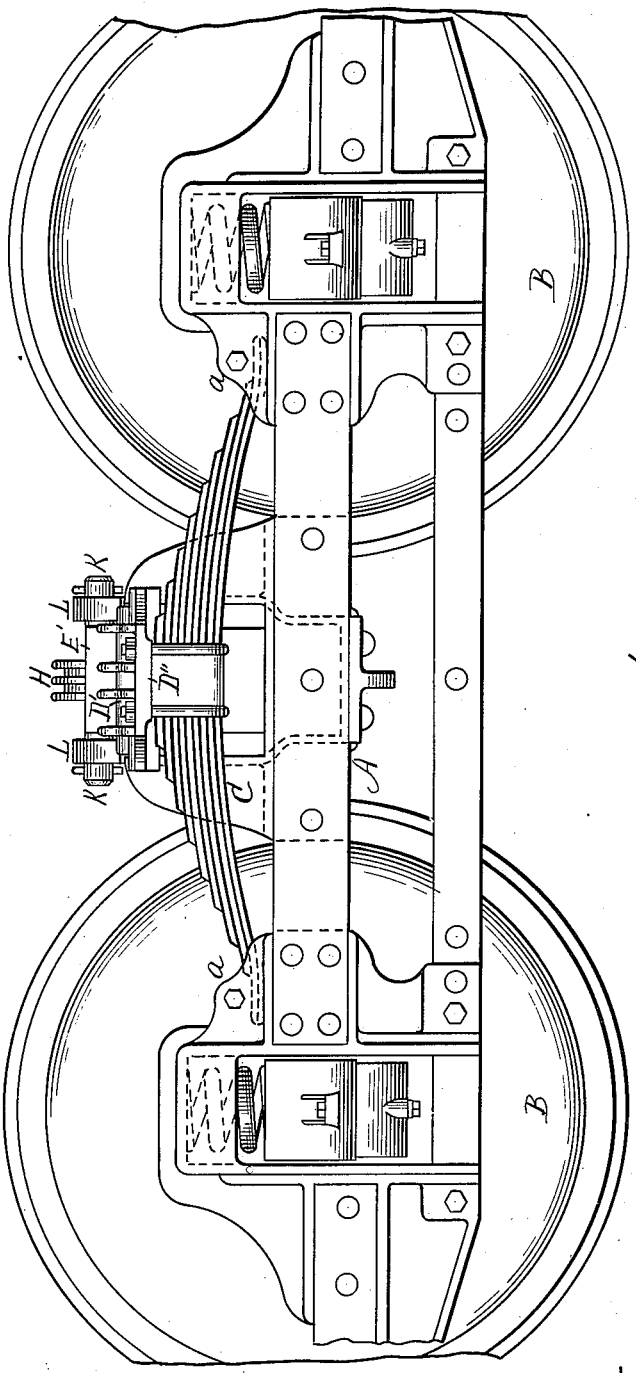


FIG. 2.

WITNESSES

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## CAR TRUCK.

(Application filed Mar. 8, 1900.)

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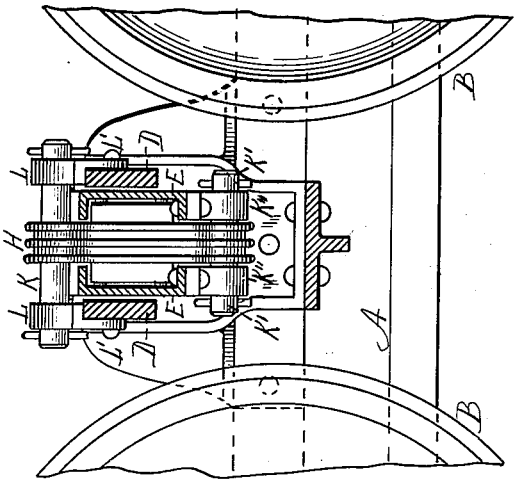


Fig. 4.

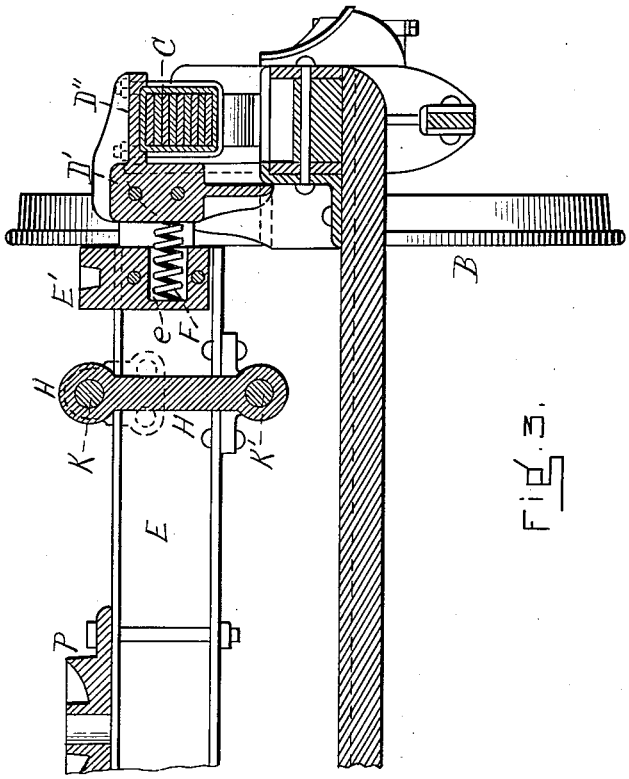


Fig. 3.

WITNESSES

A. A. Bonney.

E. B. Small.

INVENTOR

Charles E. Frye,

By his Atty.

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# UNITED STATES PATENT OFFICE.

CHARLES E. FRYE, OF LACONIA, NEW HAMPSHIRE.

## CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 648,737, dated May 1, 1900.

Application filed March 8, 1900. Serial No. 7,772. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. FRYE, a citizen of the United States, residing in Laconia, in the county of Belknap and State of New Hampshire, have invented new and useful Improvements in Car-Trucks, of which the following is a specification.

This invention relates to trucks especially adapted for passenger-cars, and more particularly, but not exclusively, for street-cars or electric cars as distinguished from steam-railway cars.

This invention has for its principal object to produce a truck in which the bolster is exceptionally well cushioned against oscillation, with particular reference to the effect on the car when passing over a curved track, and in carrying out my invention instead of supporting the bolster directly on and by the springs I suspend it from the transom, so that the bolster and the transom are supported as a whole on the elliptic springs and both travel vertically together and interpose cushioning-springs between the ends of the bolster and the transom for effecting the relative lateral movement of the bolster.

The nature of the invention is fully described below and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a car-truck embodying my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical section taken on line 3, Fig. 1. Fig. 4 is a vertical section taken on line 4, Fig. 1.

Similar letters of reference indicate corresponding parts.

A represents the truck-frame, A′ being the end piece, and B represents the wheels, supported in the ordinary manner.

C C are the elliptic springs, supported by the frame and directly by the pedestals *a*.

D D are the two parallel portions of the transom, connected at their outer ends by the cross-pieces or end pieces D′, Figs. 1 and 3, which are formed with plates D″, Figs. 2 and 3, resting centrally on and connected with the springs C.

E is the bolster, made in two parts, as shown in Fig. 1, connected at their ends by the cross-pieces or end pieces E′, Figs. 1 and 3. The end pieces E′ of the bolster are provided with recesses or pockets *e*, containing horizontally-disposed spiral springs F, whose outer ends bear against the end pieces D′ of the transom. The bolster is free to move horizontally—that is to say, laterally with relation to the car—within the transom, but has no relative vertical movement, it being suspended on the transom by hangers H, preferably two in number, which extend down between the two parts to the bolster E, said bolster having its inner surfaces recessed at E″ for their accommodation. These hangers are supported from cross-rods K at their upper ends and held centrally between the two parts of the bolster by blocks or collars K″ upon the lower cross-rods K′, which extend through their lower ends. The supporting-rods K are sustained by ears or brackets L, which are bolted at L′ to the outer surfaces of the transom D. (See Fig. 4.) Guides S on the frame prevent lateral movement of the bolster and transom. P is the truck center plate supported by the bolster and intended to receive the king-bolt.

It will be seen that the bolster is suspended directly from the transom without intermediate springs and that the transom and bolster move together vertically and as one piece on the elliptic springs C. The springs F are intermediate with the bolster only as regards their relative horizontal movement. When the car reaches a curve, the bolster moves toward the long rail—that is, the outer curved rail of the track against the outer spring F—and is of course followed by the inner spring at the other end of the transom. As the outer spring is contracted the inner spring expands, but remains under tension, and thus a violent thrust of the bolster against the end piece D′ of the transom is prevented. After the car has passed the curve the bolster gradually slides back and resumes its original central position.

As the bolster and transom move vertically together on the elliptic springs, the guides S serve to prevent lateral movement, and thus all friction of the springs F in their pockets is avoided.

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

1. In a car-truck, the frame; springs C supported thereby; the transom supported at its opposite ends by said springs; the bolster;

and hangers supported by the transom and supporting the bolster, whereby the bolster is suspended from the transom and said bolster and transom are as a whole supported by the springs C and moved vertically on said springs without any vertical movement with relation to each other, substantially as described.

2. In a car-truck, the frame; springs C supported thereby; the transom supported at its opposite ends by said springs; the bolster supported by the transom and moving vertically therewith; and cushioning-springs between the outer ends of the bolster and the end pieces of the transom, whereby the bolster and transom are supported by the springs C without relative vertical movement, and the bolster is allowed horizontal movement within the transom against the cushioning-springs, substantially as set forth.

3. In a car-truck, the frame; the springs C supported thereby; the transom D supported at its opposite ends by said springs and provided with the end pieces D; the bolster E made in two substantially-parallel parts connected by the end pieces E′ and located between the two parallel portions of the transom: and the hangers H, cross-rods K, K′ and ears L supporting the cross-rods K, whereby the bolster is suspended from the transom and prevented from vertical movement with relation thereto, and both sustained as a whole by said springs, substantially as described.

4. In a car-truck, the frame; the springs C supported thereby; the transom D supported at its opposite ends by said springs and provided with the end pieces D′; the bolster E made in two substantially-parallel parts connected by the end pieces E′ and located between the two parallel portions of the transom, said end pieces E′ being provided with the pockets or recesses *e*; the cushioning-springs F extending from said pockets in the bolsters against the transom; and hangers whereby the bolster is suspended from the transom and prevented from vertical movement with relation thereto but allowed relative horizontal movement, substantially as set forth.

CHARLES E. FRYE.

Witnesses:
HENRY W. WILLIAMS,
A. N. BONNEY.