(No Model.) 2 Sheets—Sheet 1.

E. C. MANNING.

CAR TRUCK.

No. 326,999. Patented Sept. 29, 1885.

Fig. 1.

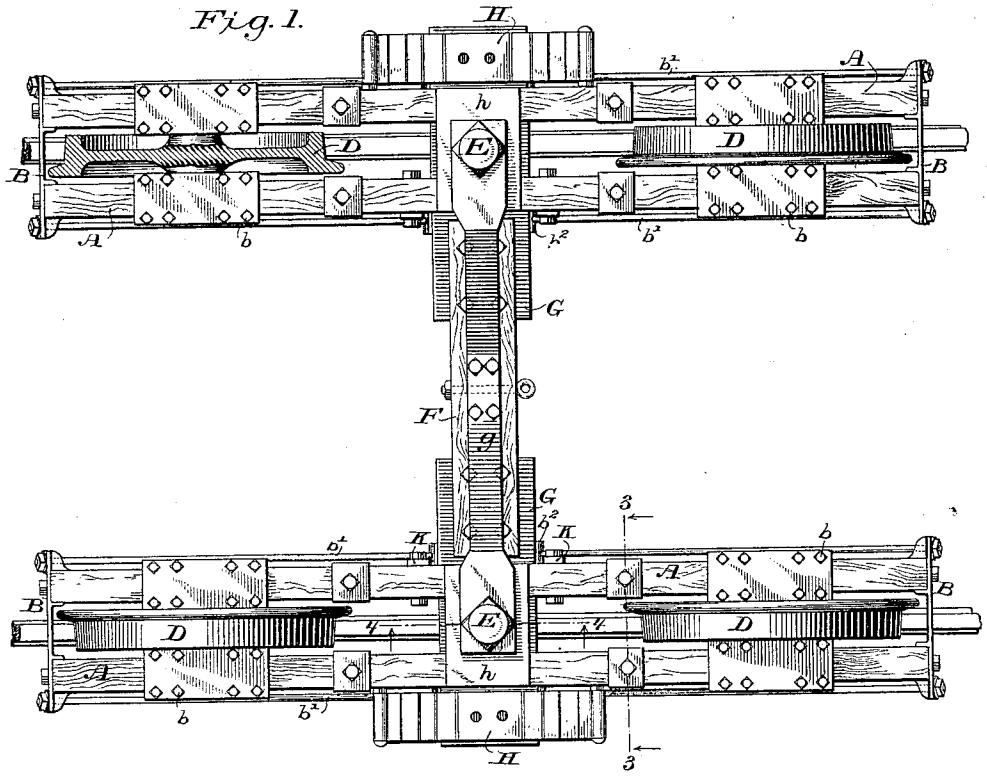
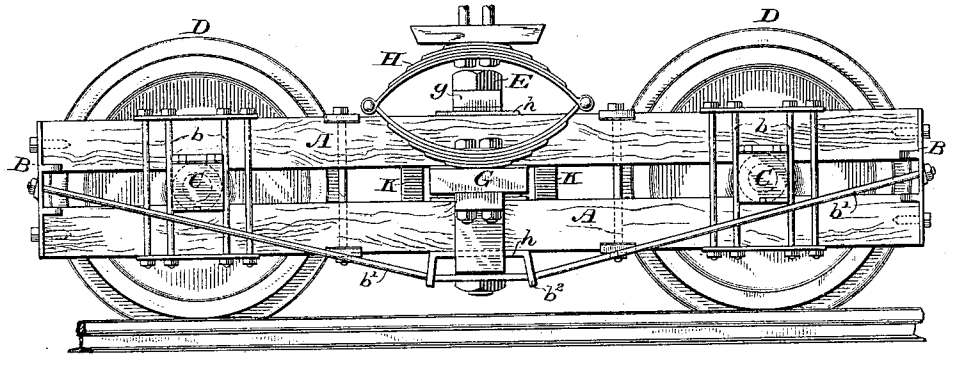


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

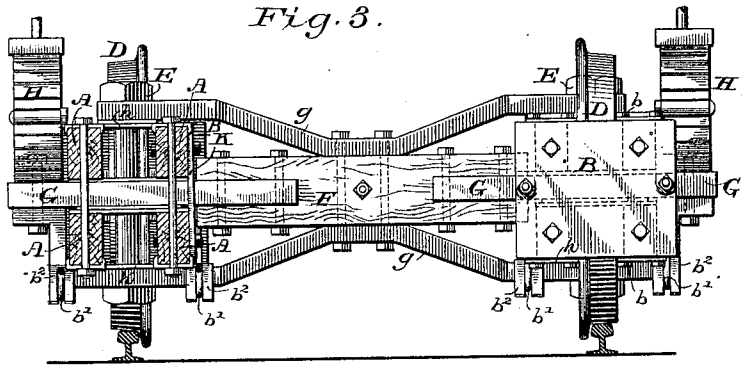


Fig. 4.

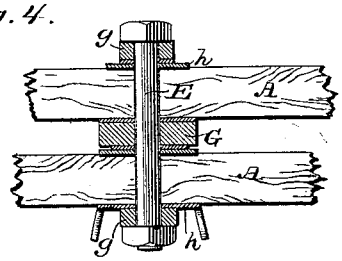
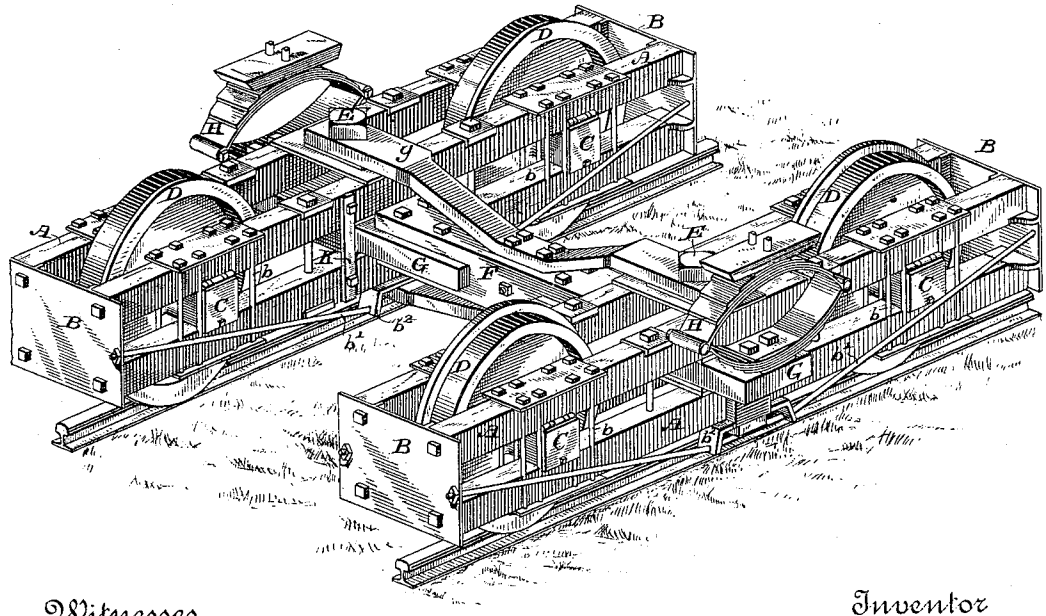


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

EDWIN C. MANNING, OF WASHINGTON, DISTRICT OF COLUMBIA.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 326,999, dated September 29, 1885.

Application filed June 6, 1885. (No model.)

To all whom it may concern:

Be it known that I, EDWIN C. MANNING, a citizen of the United States, residing at Washington, in the the District of Columbia, have invented certain new and useful Improvements in Railway-Car Trucks, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in railway-car trucks; and it consists in so arranging the wheels, springs, and pivotal points that the truck as a whole shall be capable of the freest diagonal movement and enabled to round the sharpest curves without strain. The wheels are mounted on short independent axles journaled in a separate frame on each side of the truck, and the springs are located on the outside in such manner as to give the greatest possible lateral support to the car. I accomplish my object with the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a truck constructed according to my invention. Fig. 2 is a side elevation thereof. Fig. 3 is an end view, partly in section, on the line 3 3 of Fig. 1. Fig. 4 is a detail view in section on the line 4 4 of Fig. 1. Fig. 5 is a perspective view of the device as a whole.

Similar letters denote like parts.

A A A A represent horizontal timbers which are secured in position and firmly united by metallic end pieces, B. The pieces A are of about the length of an ordinary car-truck, and between the upper and lower pair are secured journals C, within which are mounted the wheels D, the said wheels being supported upon short axles *b*, that do not extend beyond the boxes C. The boxes C are firmly held in position by suitable tie-bolts, *b*, extending vertically through the timbers A. In this manner the wheels are supported independently, and therefore capable of the greatest freedom of motion. The timbers A are further strengthened by the addition of tie-rods *b'*, which extend from the end pieces B and pass below the center of the frame, where they are supported on suitable lugs extending from plates uniting the pieces A.

The wheel-carrying frames are united transversely by a single centrally-located connecting piece or bolster, which is also provided with suitable upper and lower braces, as follows: F is the central portion lying between the wheel frame, and usually constructed of wood. To each end of this piece F are secured iron bolster-plates G, which extend through the central portion of the frame and project laterally beyond the timbers A, sufficiently far to support the springs H, which are permanently secured thereto, and upon which the body of the car is placed. Brace-rods *g* extend from the center of the bolster-piece F, respectively above and below the wheel-carrying frame, where they are supported upon suitable plates, *h*, the lower strap being extended forward and upward to support the extremity of the bolster. The necessary washers are inserted between the brace-rods and their supports and also between the bolster and the plate upon which it rests. King-bolts E pass through the brace-rods and the bolster and between the side timbers in each wheel-frame, thus securely connecting the independent frames.

It will be understood from the description that my improved truck consists of two independently-moving wheel-frames pivotally connected to a transverse bolster which extends beyond the frame and there supports the springs upon which the car is seated and supported, and which constitutes the sole connection between the car and the truck. The springs being situated as far apart as it is possible to get them, add very greatly to the lateral support of the car and very materially lessen the swaying motion so common in cars mounted on trucks of the ordinary central-pivot description. The independently-connected wheel-frames being pivoted at the point close to and almost directly underneath the center of the spring, are capable of adjusting themselves to the sharpest curves without that antagonism between the wheels that necessarily exists when the wheels are mounted upon axles that extend across the truck.

In order to prevent either of the wheel-carrying frames turning upon its axis beyond the line of the track in case of derailment, I provide guard-pieces K on each side of the bolster-plates G, which guards consist of strips of metal that are secured vertically to the

inner side of the timbers A, just far enough from the piece G to allow the extent of movement necessary to round the sharpest curve.

It is well known that the wheels on one side of the truck will occasionally be raised from the track in going swiftly round curves, and the guards just described serve to prevent a disproportionate movement of one side of the truck during such an occurrence, and will hold it at approximately a similar angle to the other half of the truck and in line with the rail.

One of the objects I attain by the special construction just described is that the car is thereby brought into the closest possible proximity to the wheel, it being practicable, according to my invention, to have the floor of the car only high enough to clear said wheel. When, however, it is not desirable to use springs of the species shown, the king-bolt is to be surrounded by the ordinary pivot-plate and the car seated directly thereon. A rubber or other inferior spring may then be interposed between the car and the projecting frame, and the bolster may be shortened so as not to project at all, or allowed to project only far enough to afford a point of attachment for the brace-bars.

It will be understood that when any other spring is used than that here shown the size of the wheel or the height of the frame, or both, will be so proportioned as to enable the said wheels to clear the floor of the car.

I do not confine myself to the exact details of construction hereinbefore set forth, because many modifications, to produce either greater lightness or strength, or to meet special requirements, will be obvious to the practical car-builder, and I have only undertaken to show one form embodying the principles of my invention.

What I claim is—

1. In a railway-car truck, independent wheel-carrying frames composed of four longitudinal bars, the wheels being located between the inner and outer pairs of bars, while the axle-boxes are secured between the upper and lower bars of each pair, at each side of the wheels, substantially as hereinbefore set forth.

2. In a railway-car truck, the combination of independent wheel-carrying frames composed of four longitudinal bars, the wheels being located between the inner and outer pairs of bars, and the axle-boxes between the upper and lower bars of each pair, with a transverse central bolster passing through said frames in the plane of the axle-boxes and pivoted thereto on a king-bolt located in the vertical plane of the wheels.

3. In a railway-car truck, the combination of independent wheel-carrying frames constructed substantially as described, a transverse central bolster passing through said frames in the plane of the axle-boxes, brace-bars extending from the bolster across the tops and bottoms of the upper and lower bars, respectively, of the wheel-frames, and king-bolts which pass through the bolster and its two brace-bars, pivoting them to the wheel-frames, substantially as hereinbefore set forth.

4. In a railway-car truck, the combination of independent wheel-carrying frames constructed substantially as described, a transverse central bolster passing through said frames in the plane of the axle-boxes, brace-bars extending from the bolster across the tops and bottoms of the upper and lower bars, respectively, of the wheel-frames, the lower one again united to and supporting the bolster outside of the wheel-frames, and king-bolts which pass through the bolster and its two brace-bars, pivoting them to the frames, substantially as hereinbefore set forth.

5. A railway-car truck consisting of the combination of two independent parallel wheel-carrying frames and a transverse bolster centrally pivoted to each frame and extending laterally therefrom to form the support for the load outside of the wheel-frames, substantially as hereinbefore set forth.

6. A railway-car truck consisting of the combination of two independent parallel wheel-carrying frames, a transverse bolster centrally pivoted to each frame and extending laterally therefrom, and a spring secured at each projecting end of the bolster and adapted to support the body of the car, substantially as described.

7. In a car-truck, the combination, with two parallel independently-pivoted wheel-frames, of a central connecting-bolster, and guards attached to the wheel-frames to limit the movements of the bolster and frames with respect to each other, as set forth.

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

EDWIN C. MANNING.

Witnesses:
W. C. DUVALL,
GEO. W. YOUNG.