

G. VINCENT & M. A. WHEATON.  
Car-Truck.

No. 201,310.

Patented March 12, 1878.

Fig. 1.

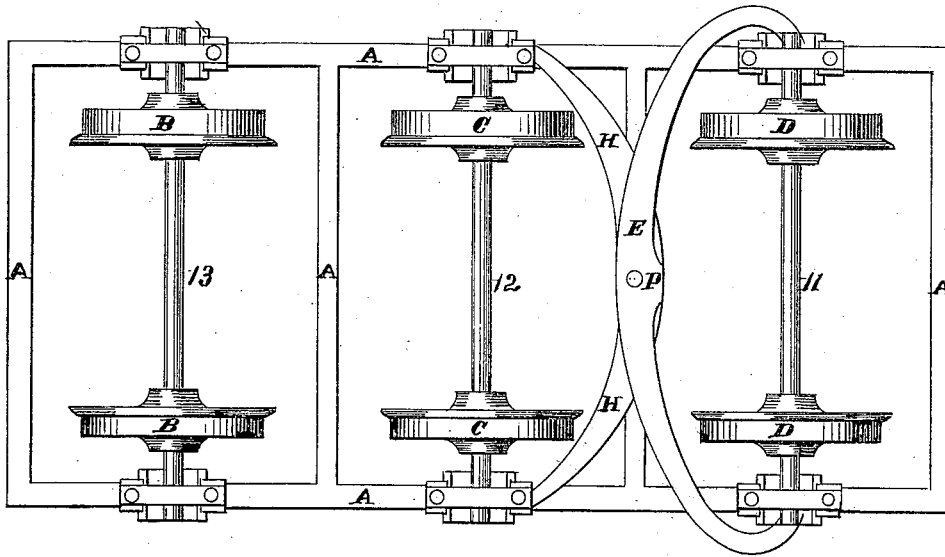
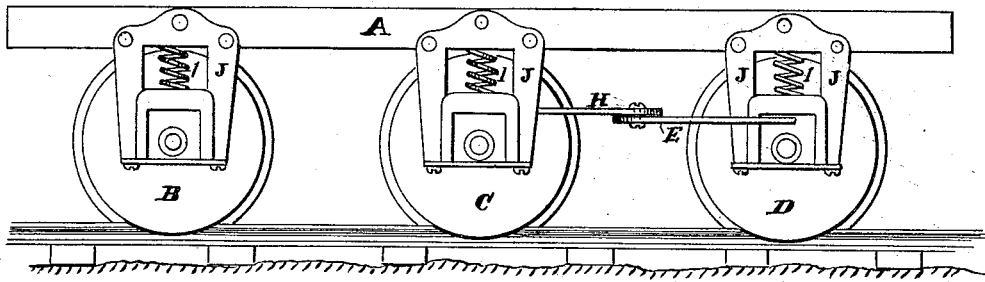


Fig. 2.



Witnesses

*Crowson Smith*  
*W. C. Southard*

Inventors

*George Vincent*  
*Milton A. Wheaton*

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Fig. 3.

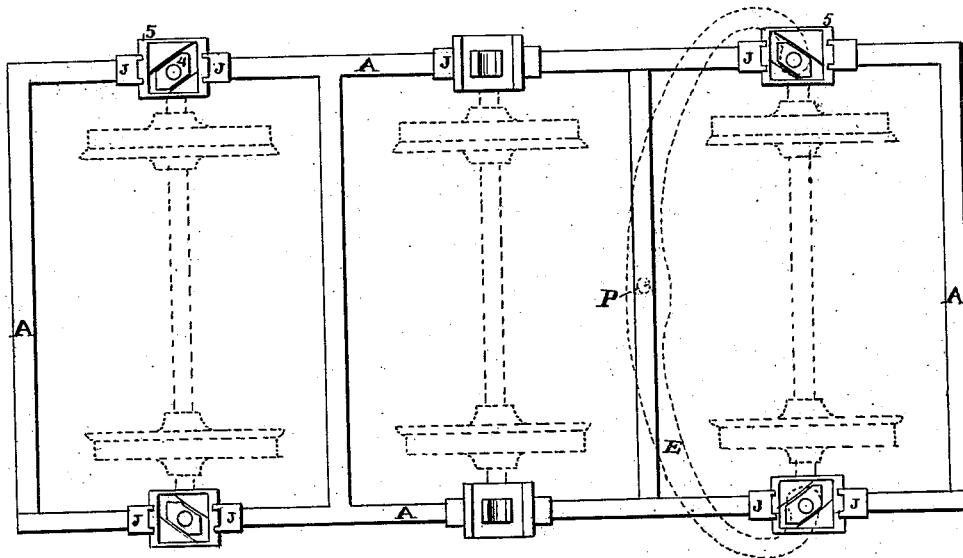


Fig. 5

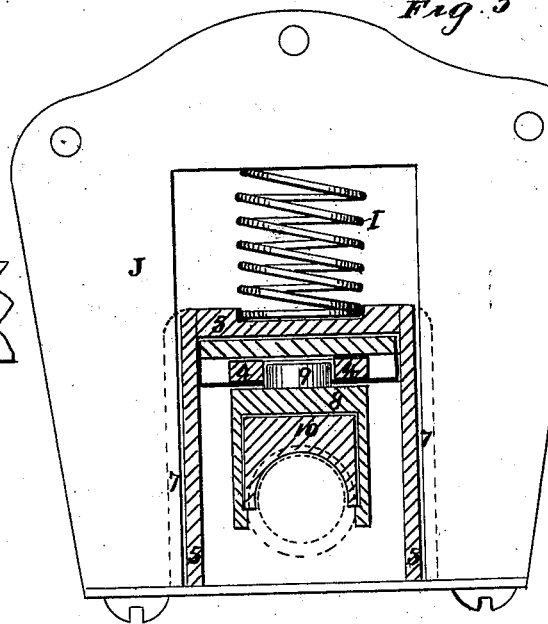


Fig. 4.

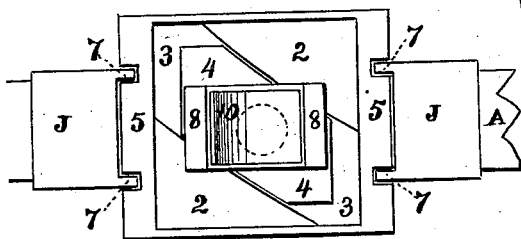
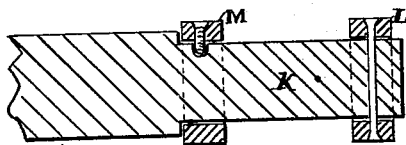


Fig. 6



Witnesses

*Crosson Smith*  
*H. C. Southard*

Inventors

*George Vincent*  
*Milton A. Wheaton*

# UNITED STATES PATENT OFFICE.

GEORGE VINCENT, OF STOCKTON, AND MILTON A. WHEATON, OF SAN FRANCISCO, CALIFORNIA.

## IMPROVEMENT IN CAR-TRUCKS.

Specification forming part of Letters Patent No. 201,310, dated March 12, 1878; application filed December 24, 1877.

*To all whom it may concern:*

Be it known that we, GEORGE VINCENT, of Stockton, California, and MILTON A. WHEATON, of San Francisco, in the State of California, have invented certain new and useful Improvements in Railroad-Trucks; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon, making a part of this specification.

Our invention relates to six-wheeled car-trucks; and it consists in the construction and arrangement of devices whereby the end sets of the truck-axles move laterally and pivot horizontally at the same time, and act as soon as they enter from a straight line to a curve, as will be hereinafter more fully set forth.

In the annexed drawings, Figure 1 is a bottom view of a car-truck embodying our invention. Fig. 2 is a side elevation of the same. Fig. 3 is a detailed bottom view thereof; and Figs. 4, 5, and 6 are enlarged detailed views of parts of our invention.

A represents the main truck-frame. B B and D D are the two end sets of truck-wheels, and C C is the middle set of truck-wheels, secured, respectively, on the axle 13, 11, and 12. E is an independent vibrating frame. H is an independent stationary frame. J J are the pedestals. K is the arm of an axle, and L M are friction-collars thereon. P is a pivot upon which the frame E vibrates. I I are the carrying-springs. 2 is a metal plate, provided with a curved groove, 3, with a slide, 4, fitted therein. 5 is an outer box, having vertical grooves 6, by means of which it is held in its position by guides 7 of the pedestals J. 8 is a box-case, of cast-steel or other hard material. 9 is the journal upon which the box-case 8 pivots, and 10 is a babbitted box in which the axle-journal turns.

In order to make the wheels upon each side of the trucks follow each other easily in the line of the curve around which the truck may be passing, it is necessary that the axles should be in a line with the radii of the curve; and in order that the axles may conform to the various lines of the different radii of changing curves, when the middle axle has no lateral movement in the truck, it is necessary that

each end axle should swing horizontally around a point midway between such end axle and the middle axle.

The independent frame H may be made of a single piece of metal, bent in suitable form, and having its ends attached to the boxes of the middle axle 12. The frame E is made in similar manner, and has its ends attached to the boxes of the axle 11, and the center of said frame E is pivoted at P to the center of the frame H, midway between the axles 11 and 12, and also on a line crossing the centers of said axles.

The babbitted box 10 for the axle-journal to turn in is inclosed in the case 8, and the journal 9 of said case works in the hole shown in the slide 4. This slide 4 is held and slides endwise in the curved slot or groove 3 of the plate 2, which is held in the upper part of the outer box 5, and this box held in the pedestal J, as described. The groove 3 is made on the arc of a circle having the pivot P for its center.

As the frame H is stationary, it is obvious that the same may be dispensed with, and the frame E pivoted to a cross-bar in the truck-frame, as shown in Fig. 3.

The ends of the frame E are perforated so as to allow the journals 9 to pass through and connect said frame with the boxes.

When the truck passes from a straight line upon a curved track the curve of the track presses the forward wheels laterally out of a straight line with the truck. This pressure is resisted by the middle wheels, which act as a fulcrum, and impart the lateral pressure to the hind wheels. Both the forward and hind wheels yield to this pressure and move laterally in the truck and out of a straight line with the middle wheels, carrying their axles with them. By means of the journal 9, grooves 3, slide 4, and frame E, the ends of the axles are then compelled to follow the circular direction of the grooves 3, which direction is exactly the same and identical with the direction of the ends of the frame E as it moves around the pivot P.

By these means a compound movement is imparted to the axles 11 and 13. They not only move endwise, but one end of each axle goes forward while the other end goes backward in the truck; and said compound move-

ments are on the line of a circle having its center at the pivot P.

It is, of course, understood that a frame, E, is to be used in connection with the axle 13 as well as with the axle 11.

The wheels on each side of the truck will follow each other in a line with the track upon which they are running, whether such line is straight or curved, and if such line is a curve the axles of the truck will automatically fall in line with the radii of such curve.

The axle-journal K is provided with collars L and M, fastened thereon, for the purpose of presenting a greater bearing or friction surface against the case 8.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the outer case 5, plate

2, with curved groove 3, slide 4, and box 8, with journal 9, whereby the car-axle obtains a compound lateral and backward and forward movement, substantially as herein set forth.

2. The frame E, pivoted centrally between the axles, and connected at its end with the journals 9 of the boxes 8, in combination with the slides 4 and plates 2, with curved grooves 3, for the purposes set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 12th day of December, 1877.

GEORGE VINCENT.  
MILTON A. WHEATON.

Witnesses:

CROWSON SMITH,  
M. C. SOUTHARD.