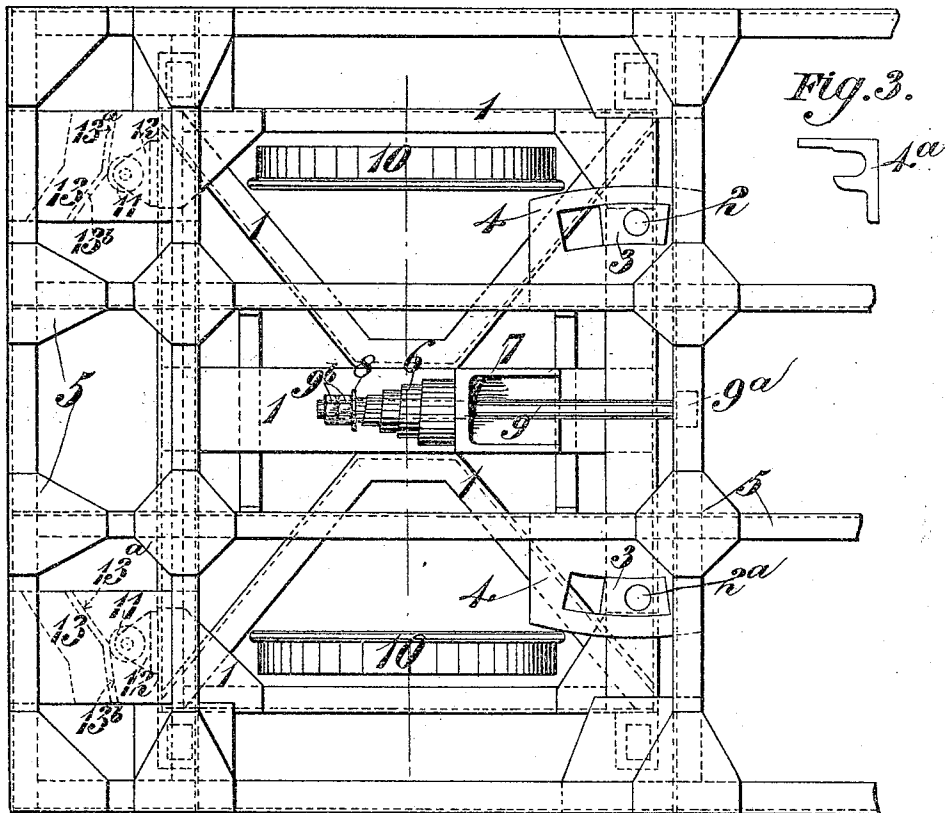
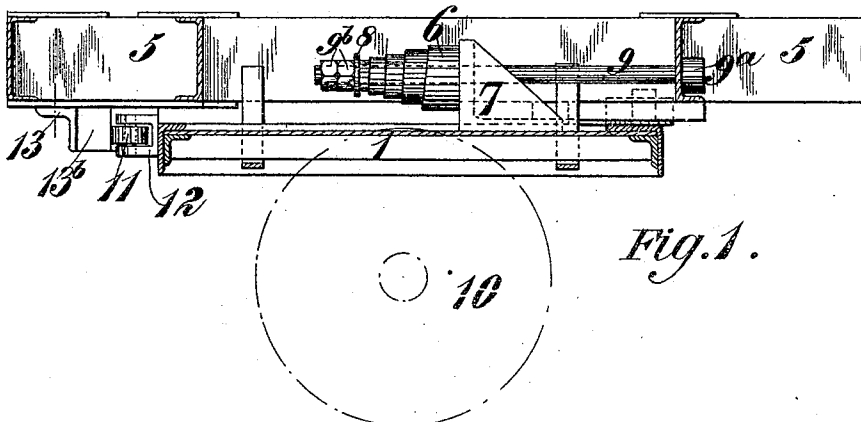


(No Model.)

J. J. D. CLEMINSON.
RAILWAY VEHICLE.

No. 511,684.

Patented Dec. 26, 1893.



Witnesses

W. Cross
Arthur Woodman

Inventor

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UNITED STATES PATENT OFFICE.

JOHN JAMES DAVIDGE CLEMINSON, OF LONDON, ENGLAND.

RAILWAY-VEHICLE.

SPECIFICATION forming part of Letters Patent No. 511,684, dated December 26, 1893.

Application filed April 18, 1893. Serial No. 470,848. (No model.) Patented in France April 11, 1893, No. 229,312; in Belgium April 13, 1893, No. 104,349; in Germany April 16, 1893, No. 71,523; in Canada May 31, 1893, No. 43,097; in Spain June 26, 1893, No. 14,532, and in Italy June 30, 1893, LXVI, 328.

To all whom it may concern:

Be it known that I, JOHN JAMES DAVIDGE CLEMINSON, a subject of the Queen of Great Britain and Ireland, residing at Dashwood House, Old Broad Street, in the city of London, England, have invented Improvements in Railway and Tramway Locomotives and other Vehicles, (which have been patented in the following countries: France April 11, 1893, No. 229,312; Belgium April 13, 1893, No. 104,349; Germany April 16, 1893, No. 71,523; Spain June 26, 1893, No. 14,532; Canada May 31, 1893, No. 43,097, and Italy June 20, 1893, No. 328, Vol. LXVI,) of which the following is a specification.

In the specification of another application for Letters Patent filed by me, Serial No. 470,981, I have described improvements in the construction of wheel bases for railway and tramway locomotive and other vehicles whereby such wheel bases can adapt themselves more effectually to curves in a railway or tramway than has been the case with constructions heretofore employed. A wheel base according thereto is constructed *inter alia* with one or more trucks each pivotally connected to the main frame of the vehicle at two points about either of which the truck is capable of turning when traveling over curves, under control of a suitable controlling device or devices consisting in the examples illustrated in the drawings accompanying my said other specification of antifriction wheels or rollers carried directly by one of the pivoted parts and acting directly against guides fixed to the other pivoted part, the guide surfaces having the forms of arcs of circles each struck from the axis of one of the pivots.

Now my present invention relates to a modified construction of wheel base of the kind referred to as I will now proceed to explain by reference to the accompanying drawings, in which—

Figures 1 and 2 are respectively, a longitudinal section, and a plan of so much of a main frame and an end truck as is necessary to illustrate the nature of my present invention. Fig. 3 is a detail view showing a modified form of bearing or support for one of the pivot pins.

1 is a truck carrying pivot pins 2, 2^a arranged one at each side of the longitudinal center line of the truck. Each of these pins in the example shown in Figs. 1 and 2 is pivoted in a block 3 fitted to slide in a slotted curved guide 4 that is fixed to the main frame 5 and the curved guiding surfaces of which are struck from the axis of the oppositely arranged pin 2 or 2^a. The controlling device in this arrangement consists of a helical spring 6 arranged between the truck and the main frame so as to resist and control the turning movement of the former. It is in the example shown arranged to bear at one end against a bracket or support 7 fixed to the truck 1 and at the other end against a collar 8 fitted on a rod 9 that extends through the spring and bracket and is provided at one end with a head 9^a that bears against a part of the main frame 5 and is provided at the other end with adjusting nuts 9^b. The curved guides 4 also act as controlling devices. By the construction described it will be seen that the truck 1 is free to turn about the axis of either of the pins 2 or 2^a as a center when passing round a curve so that the axle of the pair of wheels journaled in said truck can set itself automatically at right angles to the curved and straight portions of the rails at all parts thereof, the spring 6 tending to resist this turning movement and acting afterward to return the truck to its central and normal position when the same again enters a straight portion of the track.

The pins 2 instead of being journaled in slide blocks fitted to slide in a slotted curved guide may be each fitted in a recessed bracket or bearing 4^a such as shown in Fig. 3, but I prefer to use the arrangement of slotted guides hereinbefore described as these also serve as controlling devices to control the movement of the truck 1.

To further assist in controlling the movement of the truck, antifriction wheels or rollers 11 journaled in brackets 12 fixed to one of the pivoted parts, say the truck 1, as in the example shown, may be employed, these wheels or rollers being each arranged to work against a guide 13 fixed to the other pivoted part, say the main frame, such guide having

guiding surfaces 13^a 13^b, each in the form of an arc of a circle having the axis of one of the pins as its center.

Trucks pivoted and controlled in the manner hereinbefore described can be used in vehicles constructed with an intermediate truck capable of turning about a vertical axis and also of moving in a lateral direction relatively to the body of the vehicle as described in the specification of my said other application for Letters Patent.

What I claim is—

1. A railway or tramway vehicle having a truck pivotally connected thereto at two points, and a spring adapted to control the turning movement of said truck about each of said points substantially as herein described.

2. A railway or tramway vehicle having a truck pivotally connected thereto on each side of the longitudinal center line of the truck, and a spring arranged between the under side of said vehicle and said truck, and adapted to resist turning movement of the latter substantially as herein described.

3. In a railway or tramway vehicle, a wheel base comprising a main frame, a truck, pivotal connections arranged between the two at opposite sides of the longitudinal center line of the truck, each of said pivotal connections comprising a pivot pin and a slide block engaging one of the pivoted parts and forming a pivot therefor, and a curved guide fixed to the other pivoted part and in which said slide block is fitted to work, and a spring arranged between said main frame and truck so as to resist turning movement of the latter substantially as herein described.

4. In a railway or tramway vehicle, a wheel base comprising a main frame, a truck pivotally connected thereto on each side of the longitudinal center line of the truck, a spring arranged between said main frame and truck so as to resist turning movement of the latter, an antifriction wheel or roller carried by one of the said pivoted parts, and a guide carried by the other pivoted part and formed with curved guiding surfaces against which said antifriction wheel or roller acts substantially as herein described.

5. In a railway or tramway vehicle the combination of a main frame, a truck provided with pivot pins arranged at opposite sides of its longitudinal center line and with an abutment, a rod connected to the main frame and provided with a collar, a coiled spring arranged between said abutment and collar, slotted guides fixed to said main frame and each fitted with a slide block in each of which one of said pivot pins is journaled, antifriction wheels or rollers fixed to said truck, and guides each formed with two curved guiding surfaces each having one of the pivots as a center and against which one of said antifriction wheel or rollers works substantially as herein described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN JAMES DAVIDGE CLEMINSON.

Witnesses:

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PERCY E. MATTOCKS,

Both of 2 Pope's Head Alley, Cornhill, London, Gentr.