No. 819,480. PATENTED MAY 1, 1906.

C. T. WESTLAKE.

CAR TRUCK.

APPLICATION FILED DEC. 7, 1905.

FIG. I.

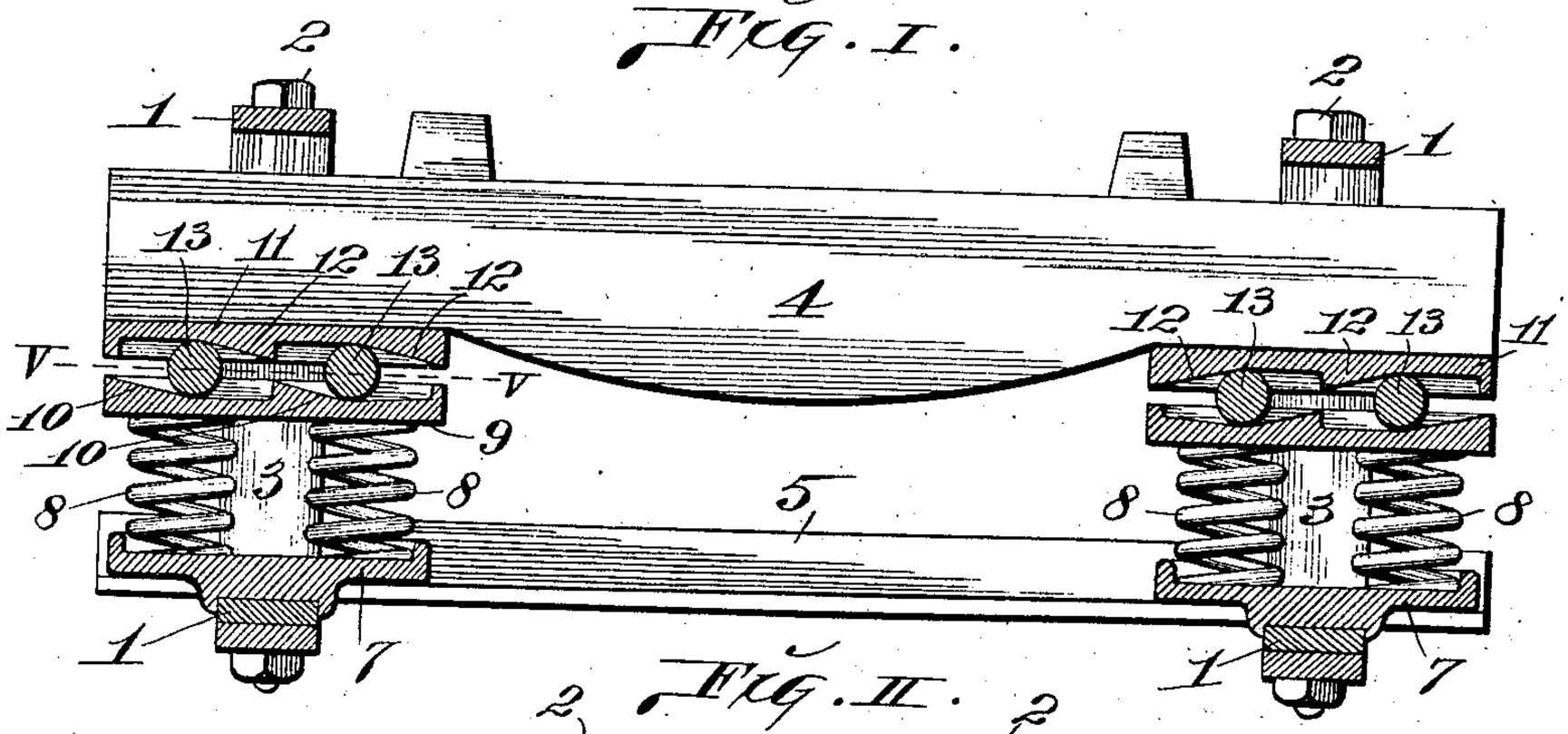


FIG. II.

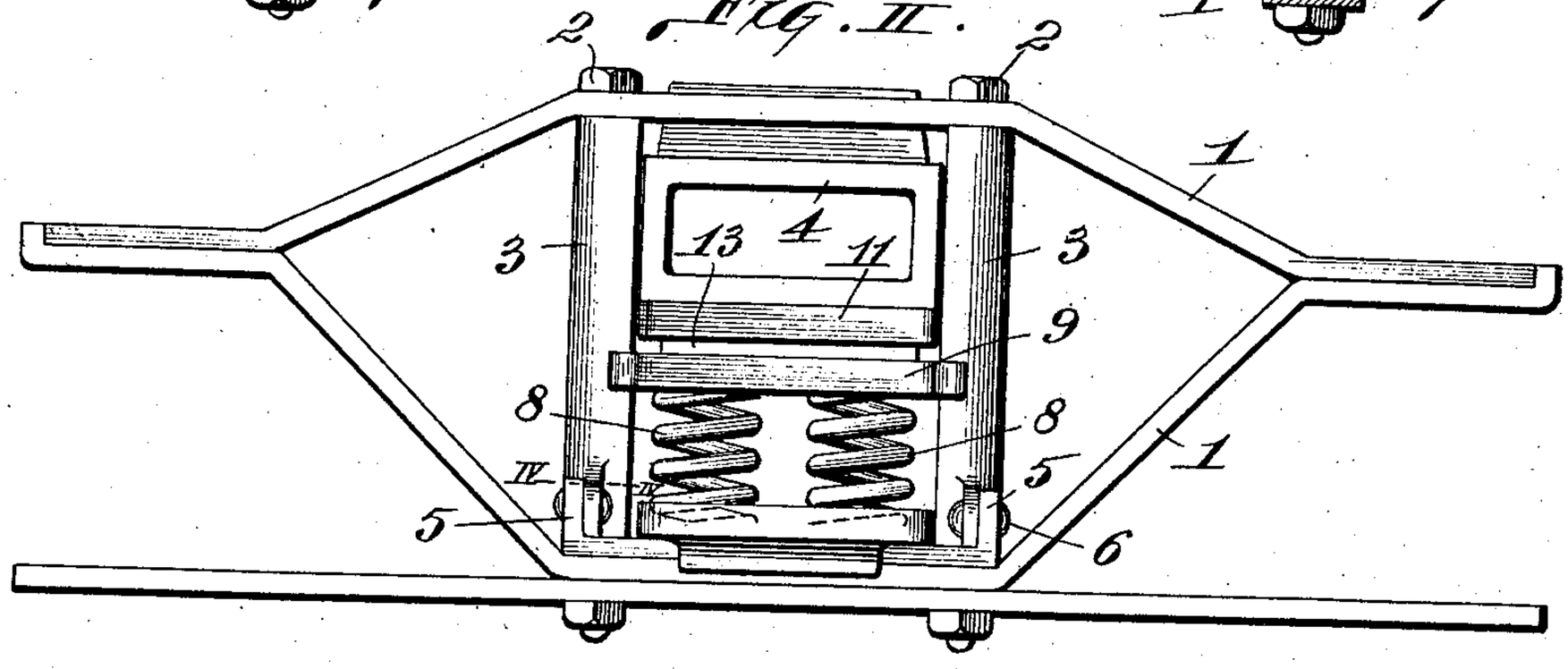


FIG. III.

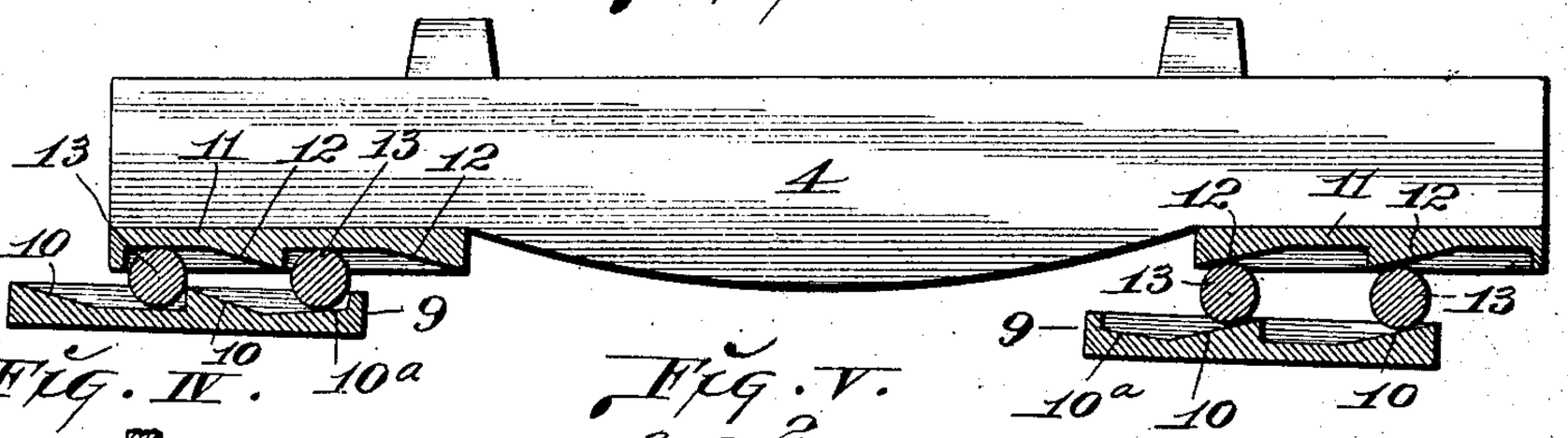


FIG. IV.

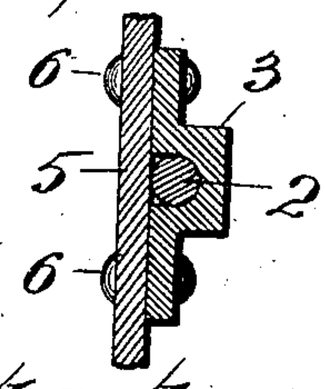
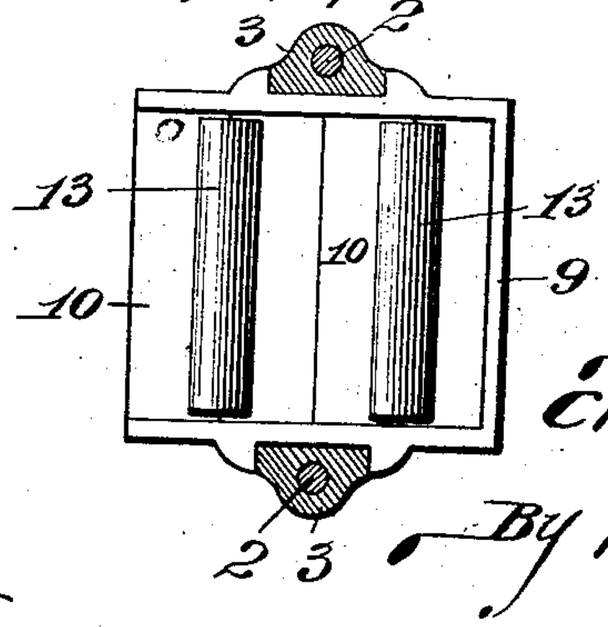


FIG. V.



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UNITED STATES PATENT OFFICE.

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CAR-TRUCK.

No. 819,480. Specification of Letters Patent. Patented May 1, 1906.

Application filed December 7, 1905. Serial No. 290,724.

REISSUED

To all whom it may concern:

Be it known that I, CHARLES T. WESTLAKE, a citizen of the United States, residing in the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Car-Trucks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a roller-support for car-bodies, whereby a rising and lowering motion of some part of the car-body support may be obtained whenever a car equipped with a roller-support lurches laterally or transversely, as in the instance of rounding a curve in a railroad-track.

The particular object of my invention is that of providing a construction whereby the equilibrium of railway-cars may be maintained in traveling over curves of railway-tracks, instead of being subject to being thrown from the tracks due to centrifugal force notwithstanding the varying elevations of the track-rails which are for safety usually established at the track points named. To this end, my roller-support is so constructed as to provide for that side of the car which moves over the outer rail of a curve in a railroad-track being elevated to a greater degree than that to which it is moved due to the elevation of the outer rail over the inner curved track-rail, while the side of the car moving over the inner curved rail is maintained in or is moved to a level corresponding to that assumed when the car is traveling on straight rails of a railway-track. By producing the elevating movement of the car-body said body is caused to be so disposed during the travel of a car over a track curve that the preponderance of weight of the car is thrown inwardly with respect to the arc of the track curve toward the inner rail in said curve. As a consequence the tendency of the car to topple due to centrifugal force is overcome owing to the center of gravity in the car being placed centrally of the truck curve instead of outwardly with respect to said curve.

Figure I is a transverse section taken through a car-truck at the location of my roller bolster-supports with the bolster above the supports in side elevation. Fig. II is an end view of the parts seen in Fig. I, shown positioned within the part of a truck-frame. Fig. III is a view illustrating the travel of the bolster on its supports. Fig. IV is an enlarged horizontal section taken on line IV IV, Fig. II. Fig. V is a horizontal section taken on line V V, Fig. I.

1 designates part of one of the side frames of a railway-car truck in which are seated the column-bolts 2, that hold the bolster-guides 3.

4 is a bolster of any ordinary type that rides vertically within the guides 3.

5 represents stays or ties that connect the side frames 1, and to which the bolster-guides are secured by rivets 6 or other suitable means of fastening.

7 designates spring-seats that are supported by the side frame 1 and positioned between the lower ends of the bolster-guides 3. Above these seats are the springs 8.

No invention *per se* is herein claimed for any of the parts just described, and they may be of any preferred form.

9 designates lower bearing-plates surmounting the springs 8. Each of these plates is furnished at its upper side with upwardly and outwardly inclined runway-planes 10, one of which extends, preferably, to the outer edge of each plate and the other of which preferably terminates approximately at the horizontal center of each plate. Adjacent to each of the inclined-plane runways 10 is an approximately horizontal-plane runway 10^a, thereby producing continuous runway-surfaces, portions of which are inclined and the remainder of which are practically horizontal.

11 designates upper bearing-plates positioned beneath the bolster 4 and located immediately above the lower bearing-plates 9. Each of these upper bearing-plates is provided with downwardly and inwardly inclined runway-planes 12, that surmount the upwardly and outwardly extending runway-planes 10 of the lower bearing-plates 9. Adjacent to each of the inclined runway-planes 12 is an approximately horizontal-plane runway 12^a, thereby providing continuous runway-surfaces, portions of which are inclined and the remainder of which are practically horizontal. The inclined runway-planes of the upper plates are disposed in opposite directions to the inclined runway-planes of the lower plates, so that said planes incline reversely with respect to each other.

13 represents rollers of any suitable configuration that are positioned between the mating pairs of bearing-plates 9 and 12.

In the practical use of my bearing-support whenever longitudinal thrust is imparted to the bolster supported thereby, due to the lat-

eral or transverse movement above the bolster of the car-body, the upper bearing-plates 11, fitted to the bolster, partake of movement corresponding to that of the bolster. The bearing-rollers 13 between the mating pair of bearing-plates 9 and 11 at the side of the car above the outer curve-rail of the roller-track ride upwardly on the upwardly and outwardly inclined runway-planes 10 of the lower bearing-plate 9 and the downwardly and inwardly inclined runway-planes 12 of the upper bearing-plate 11 mating with said bearing-plate 9 ride on the bearing-rollers 13. The end of the bolster which is supported by the mating bearing-plates 9 and 11 just referred to is therefore elevated, as illustrated at the right-hand end in Fig. III. Simultaneously with the action just described the bearing-rollers 13 between the bearing-plates 9 and 11 at the end of the bolster from which the thrust is directed or the bolster end located above the inner curve-rail of the track move against the approximately horizontal-plane portions of the bearing-plate runways of both the upper and lower mating bearing-plates at this end of the bolster. As a consequence the end of the bolster above the inner curve-rail remains in a lowered position, as illustrated at the left-hand of Fig. III, instead of being elevated to the position to which the opposite end of the bolster is raised. It will be seen that inasmuch as the end of the bolster over the outer curve-rail of the railway-track is elevated while the end of the bolster above the inner curve-rail is not elevated by the roller-support the car-body surmounting said bolster is tilted inwardly with respect to the arc of the track curve and that therefore the center of gravity in the car is shifted inwardly with respect to the curve, as a consequence of which the equilibrium of the car is maintained and the weight of the car is thrust onto both the inner and outer curve-rails to approximately the same degree. This being true, the wheels of the car are caused to remain firmly on both of the curve-rails notwithstanding the existence of centrifugal force which tends to throw the car-wheels riding on the outer curve-rail forcibly against said outer curve-rail and lift the car-wheels riding on the inner curve-rail from said inner curve-rail.

For the purpose of preventing the innermost bearing-rollers 13 between each mating pair of bearing-plates from becoming freed and displaced during the thrust of the bolster, due to the upper bearing-plates pivoting on the outermost of said rollers, the innermost or approximately horizontal-plane-runway portions 10^a of each lower bearing-plate are preferably inclined upwardly and inwardly, as seen in Figs. I and III, so that the inner rollers 13 traveling thereon will move upwardly to a slight extent beneath the end of the bolster remaining in lowered position.

I claim—

1. A car having a rolling body-support therein adapted to elevate one side of the car-body independent of the other side of the body, substantially as and for the purpose set forth.

2. A car having a rolling body-support therein adapted to simultaneously produce a rising movement of the car-body at one of its sides and a horizontal movement of said body at its other side, substantially as set forth.

3. In a car, the combination of a bolster, and a pair of roller-supports for said bolster adapted to elevate one end of said bolster independent of its other end, substantially as set forth.

4. In a car, the combination of a bolster, and a pair of roller-supports for said bolster; one of said supports being adapted to impart a rising motion to one end of said bolster while at the same time the other of said supports provides for a horizontal motion of the other end of said bolster, substantially as set forth.

5. In a car, the combination of a bolster, two sets of bearing-plates supporting said bolster, and rollers interposed between the bearing-plates of each of said sets; said bearing-plates having runways for said rollers that are in part inclined planes and in part horizontal planes, substantially as set forth.

6. In a car, the combination of a bolster, two sets of bearing-plates supporting said bolster, and rollers interposed between the bearing-plates of each of said sets; one of said bearing-plates in each set having a runway in part an outwardly-extending inclined plane and in part a horizontal plane and the mating bearing-plate in each set having a runway in part an inwardly-extending inclined plane and in part a horizontal plane, substantially as set forth.

7. In a car, the combination of a bolster, two sets of bearing-plates supporting said bolster, and rollers interposed between the bearing-plates of each of said sets; each of said bearing-plates having a plurality of runways each in part an inclined plane and in part a horizontal plane, substantially as set forth.

8. In a car, the combination of a bolster, two sets of bearing-plates supporting said bolster, and rollers interposed between the bearing-plates of each of said sets; one of said bearing-plates in each set having a plurality of runways each in part an outwardly-extending inclined plane, and in part a horizontal plane, and the mating bearing-plate in each set having a plurality of runways each in part an inwardly-extending inclined plane and in part a horizontal plane, substantially as set forth.

CHARLES T. WESTLAKE.

In presence of—
BLANCHE HOGAN,
NELLIE V. ALEXANDER.