

W. H. MILLER.
CAR TRUCK.

APPLICATION FILED JAN. 20, 1908.

899,674.

Patented Sept. 29, 1908.

3 SHEETS—SHEET 1.

FIG. 1.

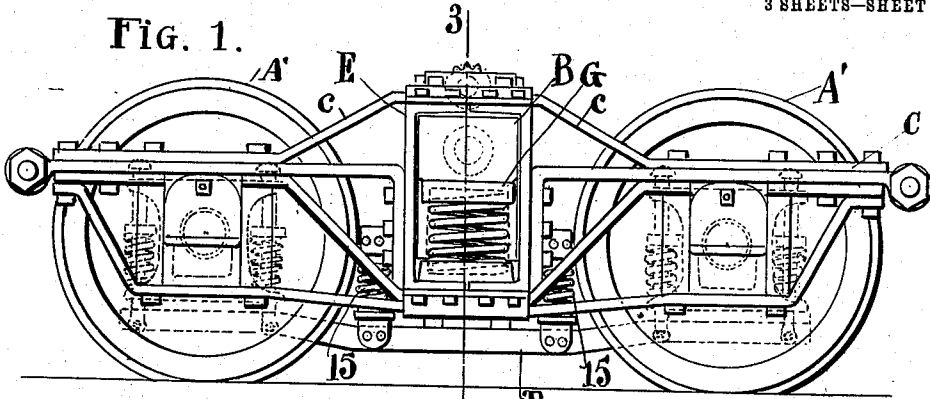


FIG. 2.

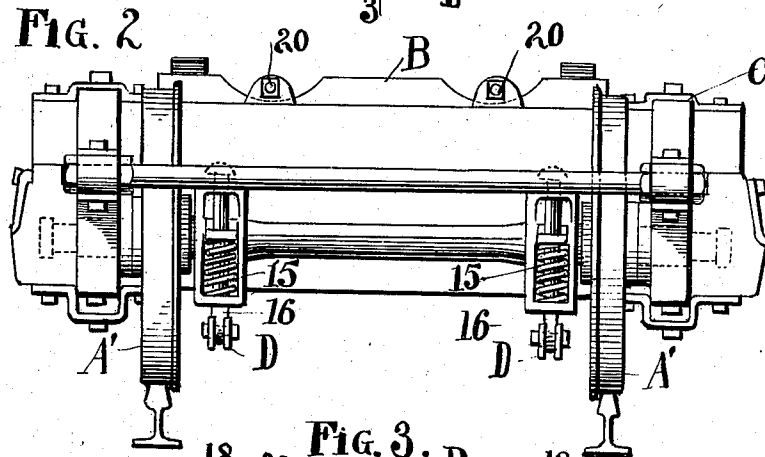
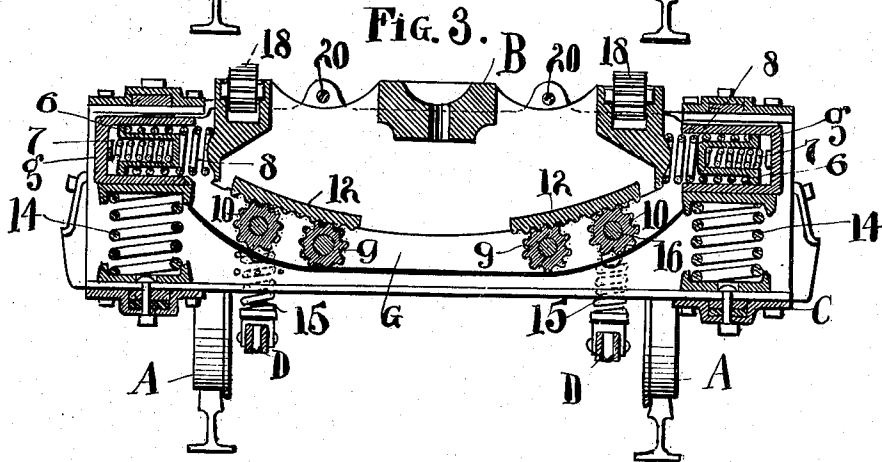


FIG. 3.



ATTEST
E. M. Fisher.
J. C. Murrell.

INVENTOR
William H. Miller.
BY Fisher & Murrell ATTYS.

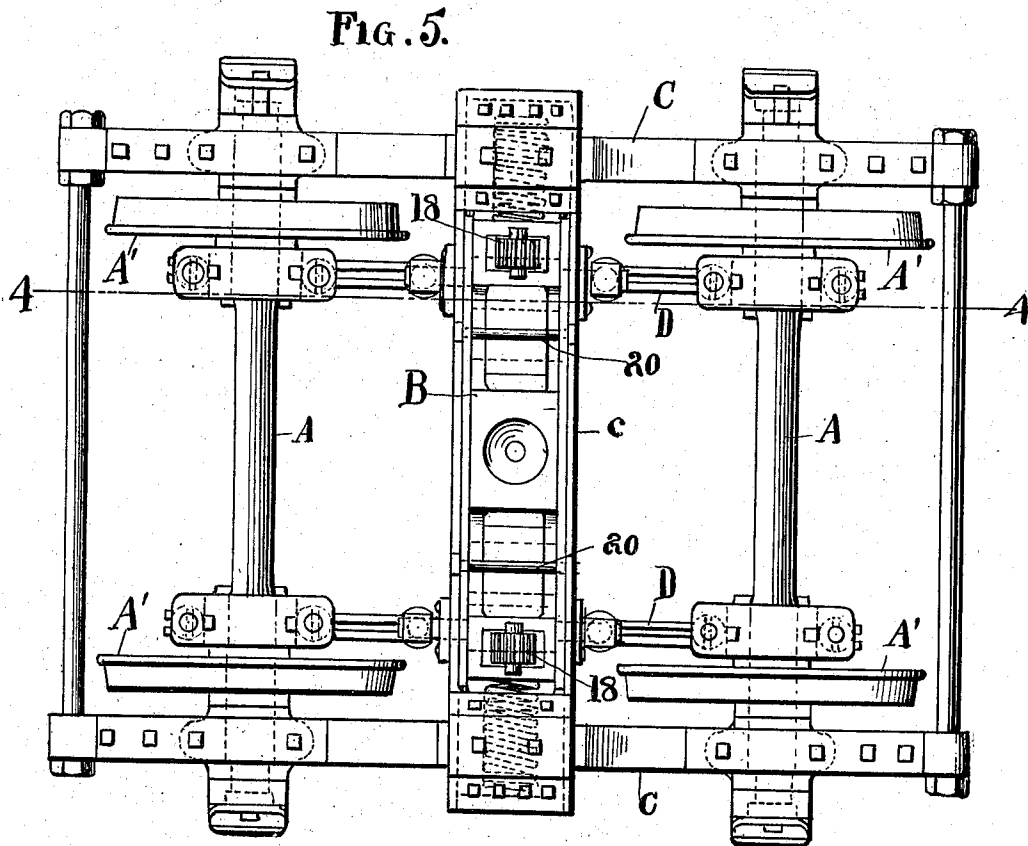
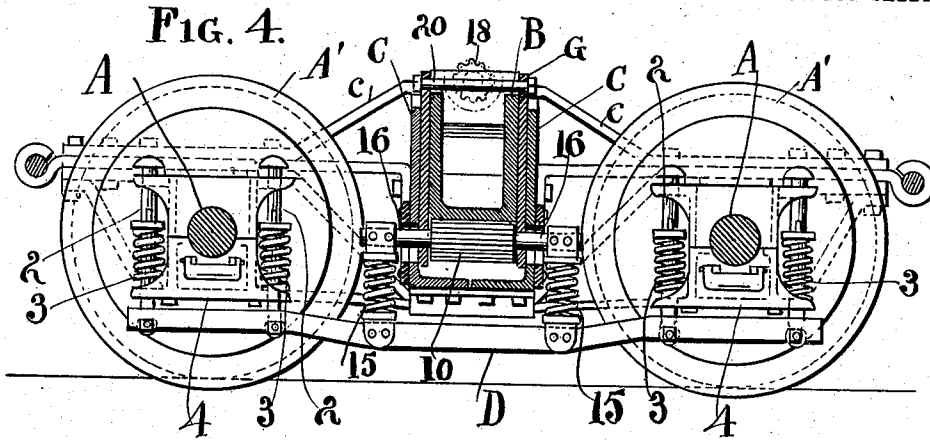
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ATTEST
E. M. Fisher
F. C. Musgrave

INVENTOR
William H. Miller.

BY Fisher & Musgrave ATTYS

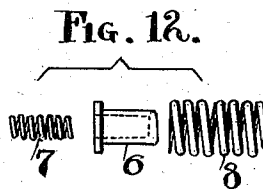
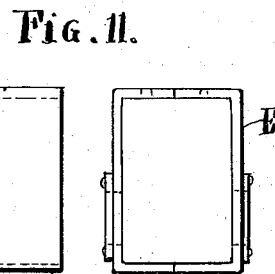
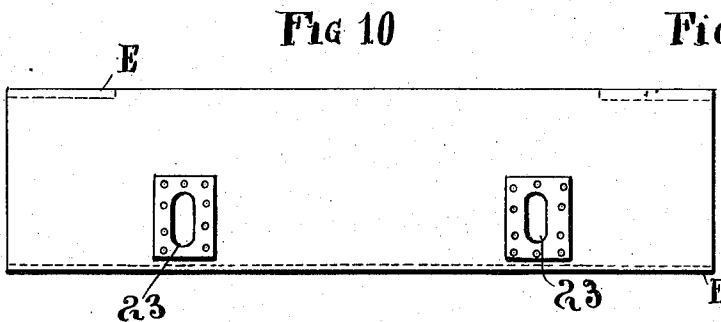
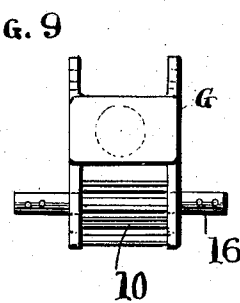
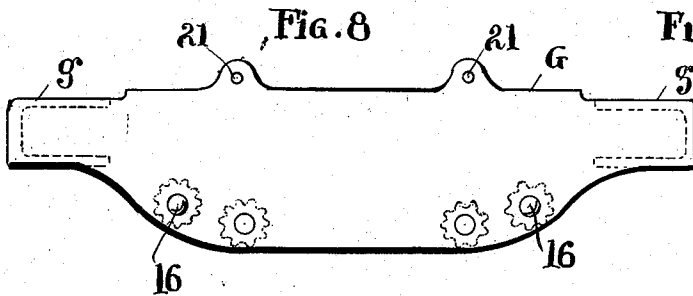
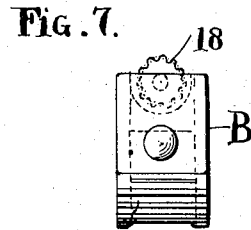
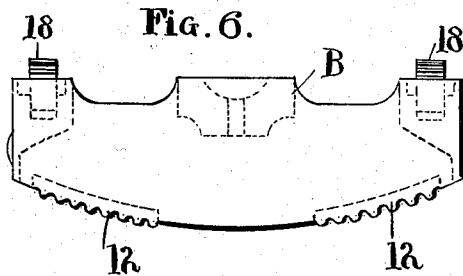
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3 SHEETS—SHEET 3.



ATTEST

E. M. Fisher
J. C. Kinsman

INVENTOR
William H. Miller

By *Fisher & Moser* ATTY.

UNITED STATES PATENT OFFICE.

WILLIAM H. MILLER, OF CLEVELAND, OHIO.

CAR-TRUCK.

No. 899,674.

Specification of Letters Patent.

Patented Sept. 29, 1908.

Application filed January 20, 1908. Serial No. 411,762.

To all whom it may concern:

Be it known that I, WILLIAM H. MILLER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Car-Trucks, and do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in car trucks, and the invention consists in a truck constructed and adapted to operate substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of my improved truck. Fig. 2 is an end elevation, and Fig. 3 is a central cross section on line 3—3, Fig. 1. Fig. 4 is a central elevation on line 4—4, Fig. 5, and Fig. 5 is a plan view of the truck. Fig. 6 is a side elevation of the bolster, and Fig. 7 is an end elevation thereof. Fig. 8 is a side elevation of the bolster support, and Fig. 9 is an end elevation thereof. Fig. 10 is a side elevation of the transom box, and Fig. 11 is an end elevation thereof. Fig. 12 is a diagrammatic view of the thimble and springs at the end of the bolster adapted to cushion the thrust thereof.

The invention as thus shown is a single car truck for one end of a car and pattern for others, and in which there are two car axles A and four several wheels A' and a truck frame C which is supported in bearings directly upon the ends of said axles outside the car wheels and without intermediate spring; so that I have a rigid and firmly built frame in which the axles rotate. The transom as an entirety is built transversely in the said frame, and is supported from the car axles independently of frame C by means of longitudinal bars D which are suspended at their ends by rods 2 engaged at opposite sides in bearings 4 on the axles inside the wheels. Springs 3 mounted on said rods 2 serve to cushion the ends of the bars D and afford spring support for the transom mechanism which is equalized as to both the axles A.

E represents the transom box, which is built rigidly into the frame C as a central transverse part thereof and is supported by truss braces c at its ends rigid with and constituting a part of the said frame. Bolster B

and its supporting member are set into this box one over the other, and base bolster G has a spring cushioned rest within said box E independently of or supplemental to the spring support through bar D and springs 3. Thus, the said base bolster G is a separate member, the outlines of which are clearly shown in Figs. 8 and 9, and has flat sides resting snugly between the flat sides of transom box E and tubular projections g at its ends adapted to receive the endwise cushioning mechanism for the bolster therein. This mechanism comprises a cup or thimble 6 with a spring 7 set therein and bearing against the closed end of the tubular extremity g of the bolster support, while another spring 8 bears against the flanged portion of said thimble and the end bolster B, so that a double spring cushion of the desired strength is afforded at both ends of bolster B to sustain and relieve side thrusts therein as may occur when the car rocks from side to side or makes a curve, and which springs are adapted to keep said bolster in its central working position. In this way I am enabled to relieve the thrust or pitch of the car incident to travel and which occurs on all roads everywhere however well they may be built. The bolster B is adapted to rest within the flat sides of the base supporting member G and has a limited endwise play therein for the accommodations just described subject to the said springs 6 and 8, and rests its weight upon said supporting member through toothed supporting rollers 9 and 10 in the said support G. The bottom of the bolster is fashioned to the segment of a circle lengthwise, like a rocker, and has a rack 12 at its bottom adapted to engage in the said wheels 9 and 10 upon which it rests, so that when the bolster rocks from side to side of the car the said rollers turn correspondingly with the movement thereof, but the curved construction of the bolster bottom and the corresponding arrangement of said rollers tends to settle the bolster back to its central working position when any side strain thereon is relieved. The said bolster supporting member E has a double spring support, the first of which is in the heavy springs 14 beneath each end thereof resting upon or in the truck frame C in the ends of transom box E in cups at their ends, and the others consisting in springs 15 which are engaged between the ends of spindles 16

of roller wheels 10 for the bolster and the spring supported bars D, Fig. 4. Vertical slots in the transom box accommodate the play of spindles 16. The rollers 9 for the bolster are mounted on spindles in the member G, but have no springs, in this instance, so that the load upon the bolster is carried by the two sets of springs 14 and 15, and through bars D by springs 3, thus distributing the burden.

The bolster B is surmounted at its end with two rollers 18 adapted to serve as side rests for the body of the car, while the load as such comes to the center as usual, and the said rollers are seated in or over cavities or pockets in the bolster which are adapted to be filled with oil and thereby provide against friction and noise at this point.

The bolster rest or support G is positively confined or anchored in transom box E and cannot fall out when the truck is inverted, and the bolster is confined by cross rods 20 in holes 21 in ears on the sides of said support.

It is to be observed that the bolster and its spring supported member and the bars D and their rests on the axle of the truck frame C, are separately removable, so that any one of said parts can be repaired or replaced without disturbing said frame.

It will be observed that the springs 3 are duplicated on each car axle for supporting bars D, and that supporting rods or bolts 2 have sufficient length to allow for all the play required to render springs 3 perfectly effective. The proportion of weight that may come onto the car axle through this special and supplemental support for the load may not be accurately stated in proportions as compared with the weight that will come upon frame C through the rest of bolster G upon the springs 14 at its ends, but more or less of the weight or load can be transferred through the carrying bars D and move as the springs 3 are made heavier. This very materially relieves the weight on frame C and distributes the load on the car axles. In this way I can make a four wheel truck to serve all the purposes of a six wheel truck and give improved results in service.

The transom box has slots 23 adapted to accommodate shafts or spindles 16 which engage springs 15 from bars D.

What I claim is—

1. In car trucks, a truck frame having a transom box across its center, a top bolster and a base bolster confined in said box, and spring supports for said bolsters resting upon the car axle inside the wheels thereon.

2. In car trucks, a truck frame having a transom box across its middle, two bolster members vertically movable together in said box and spring supports therefor independent of said truck frame and engaged with the car axles.

3. In car trucks, a truck frame and car axles mounted therein, top and bottom bolsters supported in said frame one over the other, and bars carrying said bolsters having spring supports at their ends on said axles independently of said truck frame.

4. In car trucks, a truck frame, a base bolster having a spring support in said frame, and toothed rollers mounted therein, and a top bolster having a rack resting on said rollers and springs bearing against the ends of said top bolster.

5. A car truck having a transverse transom box, a base bolster therein having toothed rollers and a top bolster having a rocker shaped bottom provided with teeth resting on said rollers.

6. A car truck comprising a rigid frame and axles therein, in combination with a set of bolsters supported one above the other in said frame and movable up and down therein and spring supports for said bolsters comprising a pair of bars spring supported at their ends from the car axle and springs interposed directly between the lower of said bolsters and said bars.

7. The truck frame having a transom box and bolsters in said box, springs at the ends of the lower of said bolsters resting in said frame and spring supports for said bolster between its ends independent of said truck frame.

8. The truck frame and the transom box therein, bolsters in said box rollers in the lower bolster supporting the upper one and having spindles extending laterally through said transom box, and spring supports for the ends of said spindles.

9. The combination of the truck frame and the car axles and bolsters across the middle of said frame, with bars having double spring hangers at their ends from said axles and springs at their middle supporting said bolsters.

10. A car truck having two bolsters mounted therein, the upper bolster provided with cavities in its top and ends, and rollers mounted in said cavities and adapted to balance the car body on the truck.

11. A car truck frame and bolsters one above the other therein, the upper bolster having cavities in its ends and top and toothed rollers mounted in said cavities.

12. A car truck frame and a base bolster therein having a bearing cup and springs within and without the same socketed in the ends thereof, and a top bolster having a rocker shaped bottom supported on said base bolster and engaged endwise by said springs and cup.

13. A car truck frame having a transom box, a base bolster mounted on springs and adapted to play up and down in said box, a top bolster and springs in the ends of said

base bolster bearing against the ends of said top bolster, said top bolster having a lengthwise rocking support on said base bolster and a plurality of spring supports for each end of
5 said base bolster.

14. A car truck comprising two axles and a frame resting on the ends thereof, in combination with bolsters mounted one upon the other in said frame and supports for said

bolsters having bearings on said axles between the bearings for said frame.

In testimony whereof I sign this specification in the presence of two witnesses.

WILLIAM H. MILLER.

Witnesses:

E. M. FISHER,
F. C. MUSSUN.