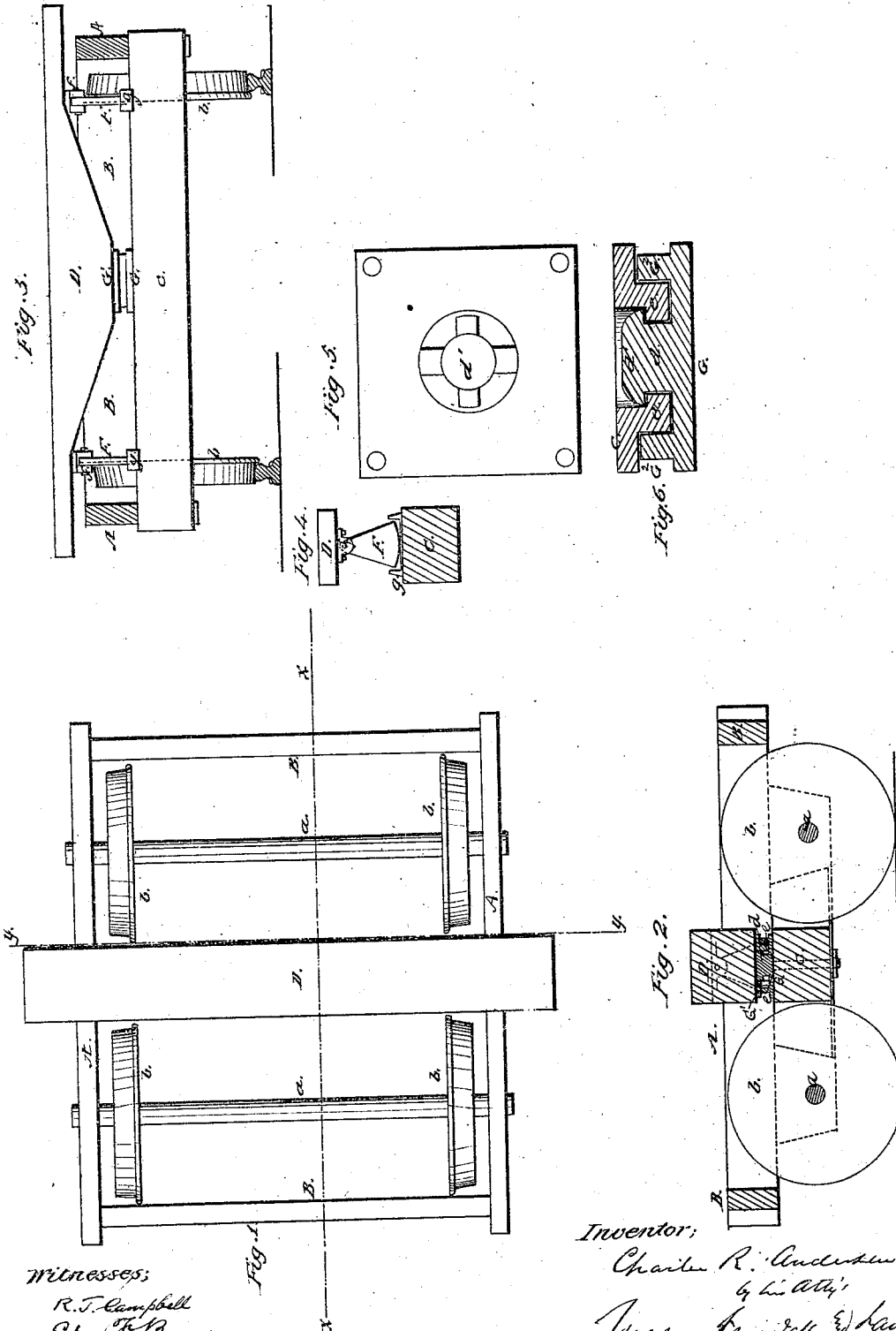


C. R. ANDERSON.  
RAILROAD CAR TRUCK.

No. 38,719.

Patented June 2, 1863.



Witnesses;  
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# UNITED STATES PATENT OFFICE.

CHARLES R. ANDERSON, OF ST. LOUIS, MISSOURI.

## IMPROVEMENT IN RAILROAD-CAR TRUCKS.

Specification forming part of Letters Patent No. 38,719, dated June 2, 1863.

*To all whom it may concern:*

Be it known that I, CHARLES R. ANDERSON, of St. Louis, in the county of St. Louis and State of Missouri, have invented certain new and useful Improvements in Railroad-Car Truck-Frames; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan view of my improved truck-frame. Fig. 2 is a longitudinal section through Fig. 1, in the vertical plane indicated by the red line *x x* thereon. Fig. 3 is a transverse section through Fig. 1, in the vertical plane indicated by the red line *y y* thereon. Fig. 4 is a sectional view showing one of the quadrant-bearings for the bolster. Figs. 5 and 6 are views of the improved center bearing for the bolster.

Similar letters of reference indicate corresponding parts in the several figures.

The object of my invention is to strengthen and to render more substantial the frames of car-trucks, and thereby increase the capacity of the trucks for supporting their load without increasing the height of the trucks or the distance of the floor of the car-body from the axles thereof; also, to bring the tractive force which is applied to the truck-frames nearer to the plane of the rails without diminishing the diameter of the wheels, thus making the cars safer, easier, and less liable to "jump the track," besides, preventing the constant tendency of the canting of the trucks over on their forward axles. It also has for its object combining with a depressed bolster-support a central key-head coupling and bearing for the bolster and car-body, which enables me to dispense with the usual king-bolt connection, and which is also self-lubricating, cheaper than the "king-bolt," and which gives great strength where it is most required; also, to combine with a depressed bolster-support and bolster rocking supports and bearings for the ends of the bolster, which allow it to have a free play on its center bearing and admit of the trucks accommodating themselves to the curves of the road in a more perfect manner than slide-bearings, rollers, or other devices which have hitherto been used, all as will be hereinafter described.

To enable others skilled in the art to fully

understand my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, A A represent the longitudinal side beams, and B B the transverse beams, constituting the main portion of the truck-frame. This frame is supported upon the axles *a a* of the truck-wheels *b b b b* by means of brackets, journal-boxes, &c., in the usual manner, and the truck-wheels *b* are of the usual diameter. The frame-beams A A are made somewhat larger vertically than hitherto, and below these beams, extending transversely across the center of the truck-frame, is a heavy beam, C, which is bolted by means of through-bolts, stirrup-straps, or other means to these beams A A, and forms a support for the bolster D, as shown clearly in Figs. 1, 2, and 3 of the drawings, and brings the bearing of this bolster in or below the plane of the bottom of the truck-frame. The bolster D consists of a very strong beam of the usual length, but somewhat thicker vertically than usual, and which tapers from its middle to its extreme ends, in order to allow it to have a bearing upon the depressed transverse beam C, while its ends extend over the longitudinal or side beams, A A, as shown in Fig. 4. In this way I am enabled to use much stronger beams than hitherto, and at the same time not increase the height of the floor of the car from the plane of the surface of the rails or the horizontal plane of the axles. The central bearing for the bolster D, which is interposed between this bolster and the depressed beam C, consists, essentially, of two metallic boxes, which are secured, respectively, to the beam C and bolster D by means of screw-bolts. The bottom portion, G, has rising out of its center a pedestal, *d*, with an oblong cross-head, *d'*, which passes through a corresponding hole in the upper plate, G', and occupies a circular recess in the upper part of this top plate. By turning either plate G G' quarter-way round the two are locked together, thus performing the duty of the king-bolt without the use of that objectionable instrument. As the bottom plate, G, does not require a hole through it, this plate, or the circular groove surrounding the pedestal *d*, becomes a cup for the retention of lubricating material for the joint.

By means of this simple pivot-coupling I secure all the objects attained by the use of a king-

bolt, and dispense with the objections to this bolt. The bolster is not weakened in its center, as with the king-bolt, and the plate or portion which receives and confines the cylindrical collar *e* in its place serves also as a retaining-cup for keeping this collar well oiled.

The side bearings, *F F*, are of cast-iron, and consist of a pivot-block, pendulum of the form of a quadrant, and a foot-plate. The pivot-blocks *ff* are firmly secured to the bottom of the bolster *D*, near the inside of the longitudinal beams *A A*, and the quadrants *F F* are pivoted to the blocks *ff* by steel pins, on which the quadrants vibrate. The lower arcs or surfaces of the two quadrants bear upon the foot-plates *g g*, which are let into the top of the depressed beam *C* flush with its surface, as shown in Fig. 4. Now, it will be seen that these side bearings for the bolster act upon the principle of a large roller or wheel, of which they are the segments, and consequently greatly reduce the friction incident to the side-pressure of the load in the car and occurrent to the "slides," which are now in common use. The heavy bearing and friction upon these dirty, rusty, slide side bearings almost render the truck a fixture to the car-body, and thus prevent its conforming to the curves of the road at switches and other places, thereby causing the train to run off the track—an occurrence more frequently owing to this evil than is generally supposed, for it is evident that an unyielding truck is constantly forcing the flange of the outer wheel to seize upon any point of projecting rail, frog, or switch, while with my improved arrangement a free and easy motion is obtained which will not be materially affected by the accumulation of dirt or rust. The center pivot-bearing can be made to work so closely that there will be no open joint for the admission of dirt, and by detaching one of the plates and giving it a quarter-turn the plates may be separated one from the other.

By suspending the supporting-beam *C* under the side beams, *A A*, of the truck-frame, instead of mortising it into the upper part of these side beams, a lower point of support for the bolster is obtained, which being the point where the propelling or tractive force is applied to the truck, there is less tendency to cant the truck over on its forward axle when more than the usual obstruction opposes the

movement of the truck. Depressing the beam *C* gives more room for the deep bolster *D*, and enables me to increase the radii of the quadrants *F F*. It also enables me to use stouter timbers in the truck-frame and to make a much more substantial frame than hitherto without increasing the height of the car-body above the track or the necessity of bracing it with iron, hog-chains, bolts, &c., as in trucks now in common use.

By employing suspended quadrants *F F*, I obtain in one-half the compass required for rollers or wheels the necessary support and length of bearings, and get rid of the quadrants falling down from under the beam *D*, as in the use of quadrants hung or pivoted to the beam *C* and extending up therefrom to *D*.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. Arranging the supporting-beam *C* for the bolster *D* below the plane of the bottom of the truck-frame, and making said beam a fixture with *A* and a support for the ends as well as the center of the bolster, substantially as described.

2. Supporting the ends of a centrally-pivoted bolster, *D*, suspended upon pivoted quadrants *F F*, which admit of a longitudinal movement, and a depressed beam, *C*, substantially as described.

3. The application of the center pivot-bearing, consisting of plates *G G'*, cylindrical box *G<sup>2</sup>*, and a vertical key-head, *d d'*, in a car-truck constructed substantially as herein described.

4. Making the base and side bearing for the hollow center pivot an oil-cup for lubricating this pivot, and also a chamber for keeping said pivot in place, substantially as described.

5. A truck-frame for railroad-cars, consisting of two side beams, *A A*, transverse beams *B B*, depressed transverse bolster-support *C*, and the tapering bolster *D*, arranged and operating substantially as herein described.

6. The combination of plates *G G'*, quadrants *F F*, and beams *C D*, all arranged substantially as described.

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Witnesses:

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