

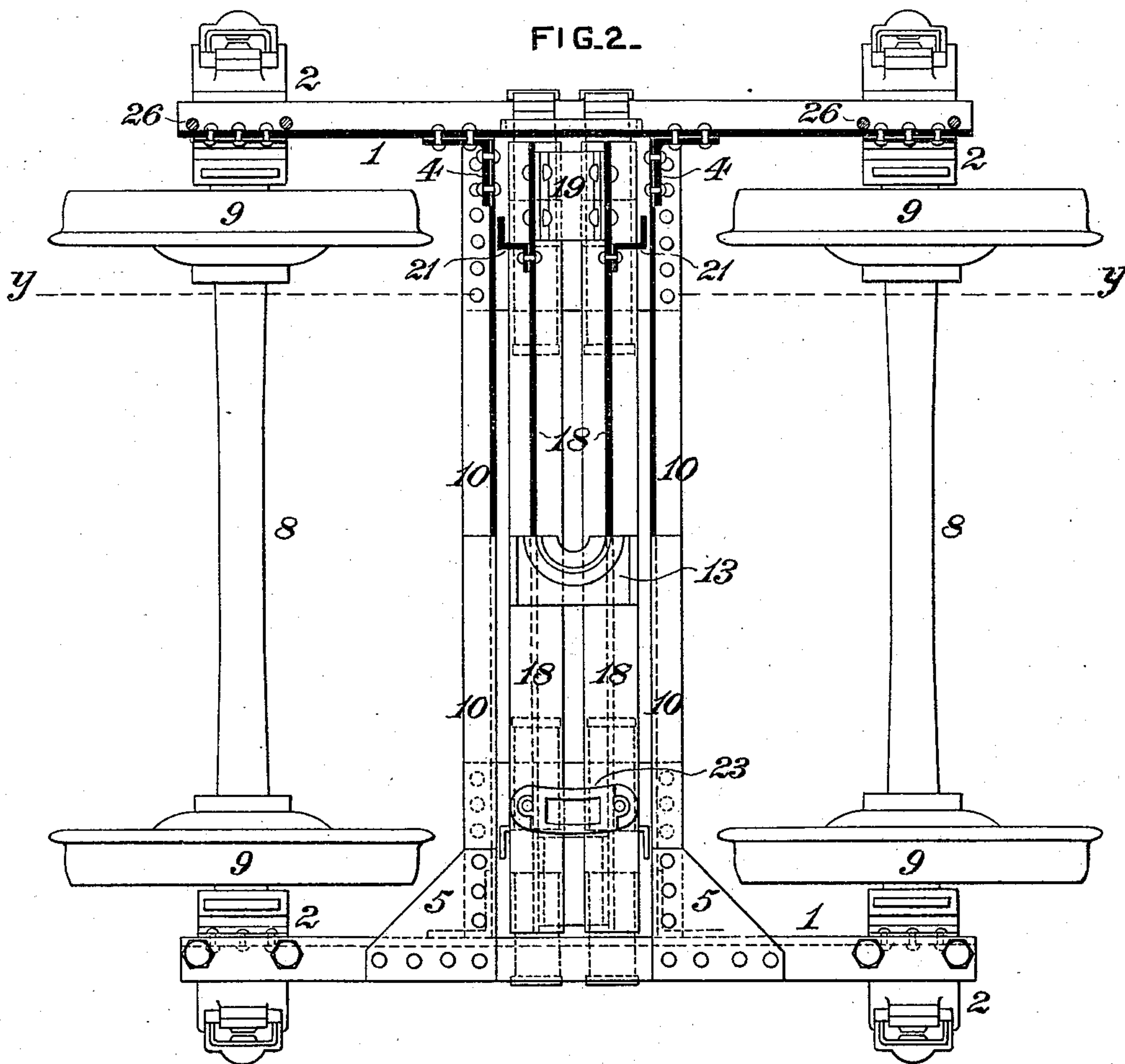
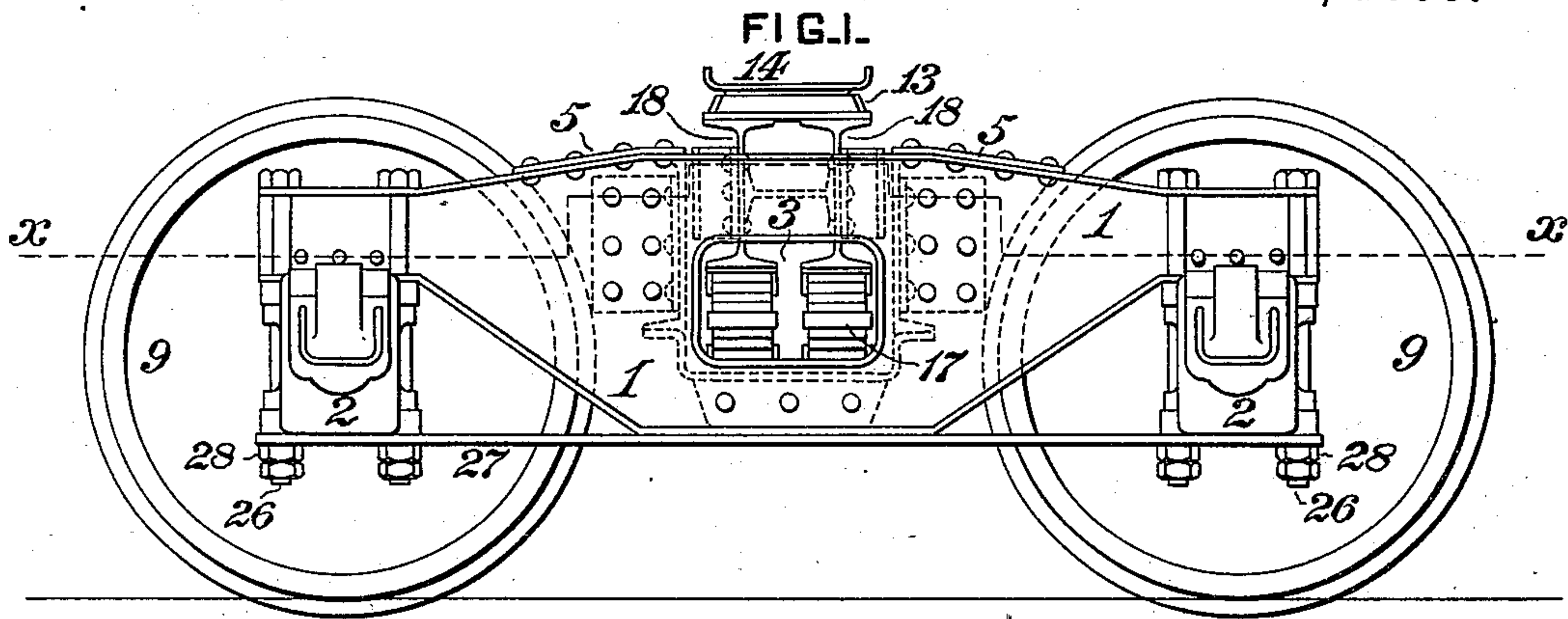
(No Model.)

2 Sheets—Sheet 1.

A. K. MANSFIELD.  
CAR TRUCK.

No. 548,807.

Patented Oct. 29, 1895.



WITNESSES:

*T. J. Hogan.*  
*J. E. Baithen*

INVENTOR,

*A. K. Mansfield,*  
*by J. Howard Bell,* Att'y.

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FIG. 3.

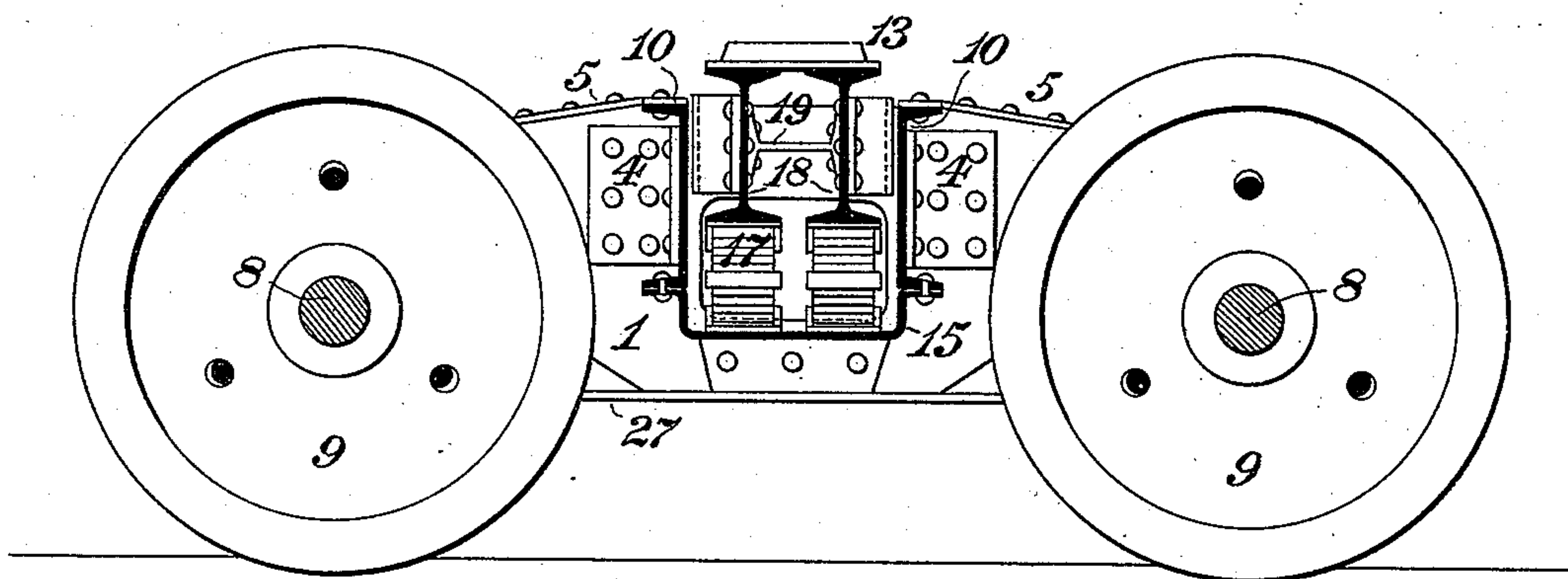
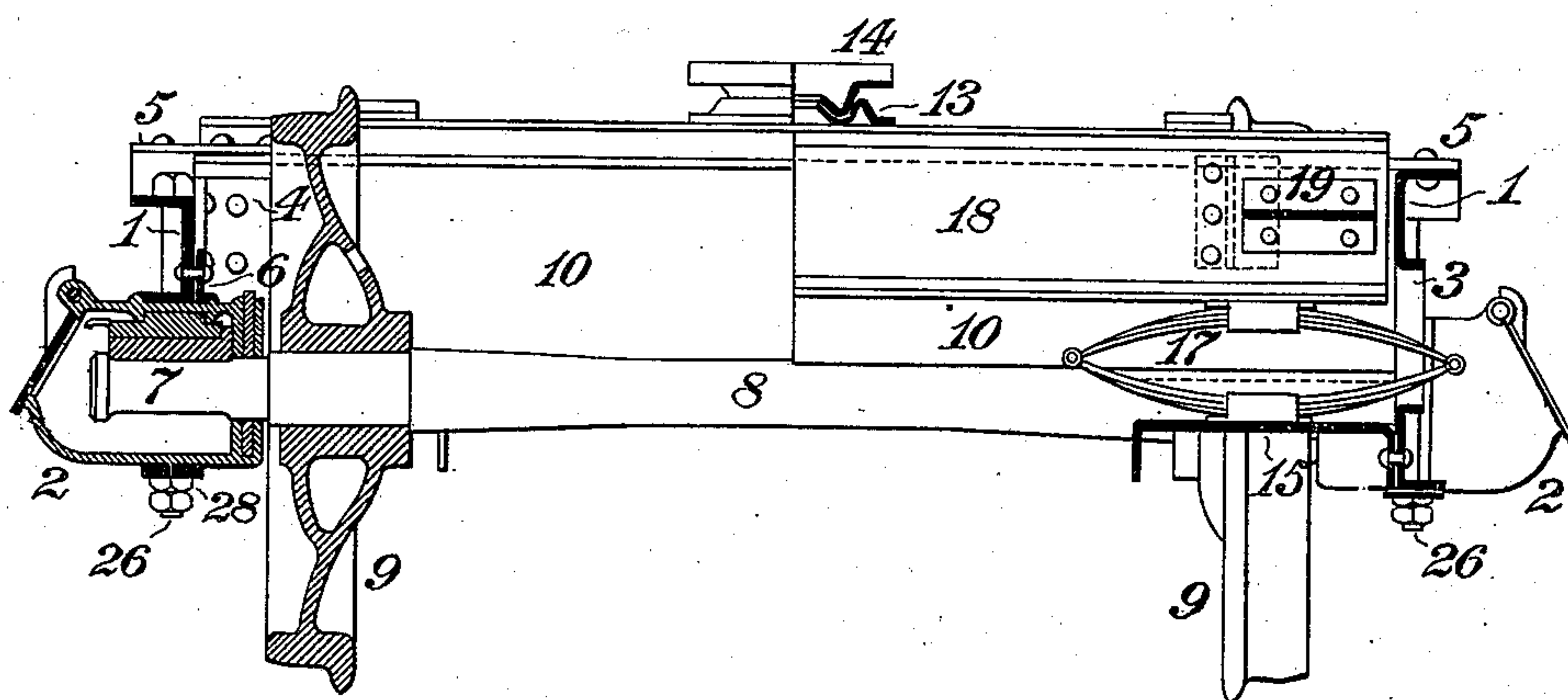


FIG. 4.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ALBERT K. MANSFIELD, OF SALEM, ASSIGNOR OF ONE-HALF TO SAMUEL M. FELTON, OF CINCINNATI, OHIO.

## CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 548,807, dated October 29, 1895.

Application filed August 16, 1895. Serial No. 559,437. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT K. MANSFIELD, of Salem, in the county of Columbiana and State of Ohio, have invented a certain new and useful Improvement in Car-Trucks, of which improvement the following is a specification.

My invention relates to car-trucks of the class or type in which metallic members are employed throughout, and which are more particularly designed for service in freight-cars and locomotive-tenders, an instance of such class or type being exemplified in an application for Letters Patent filed by me May 9, 1895, Serial No. 548,703.

The object of my present invention is, as in my application, Serial No. 548,703, aforesaid, to provide a truck of this class which shall embody the features of simplicity, strength, durability, and economy in construction, and which shall afford convenient facilities for the utilization of springs of any desired type and for the ready removal and replacement thereof, as may from time to time be required.

The improvement claimed is hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a side view, in elevation, of a car or tender truck, illustrating an embodiment of my invention; Fig. 2, a plan view with the upper half in section at the line *xx* of Fig. 1; Fig. 3, a vertical longitudinal section at the line *yy* of Fig. 2; and Fig. 4, a vertical transverse section, the left-hand half being taken in the plane of one of the axles and the right-hand half in the central plane of the truck.

My invention is designed to economize, simplify, strengthen, and lighten the construction of the truck-frame by utilizing therein, wherever practicable, plates, sheets, or beams of metal, preferably steel, brought to the required form by pressing, bending, or rolling, and particularly commercial shapes, as I-beams and channels, these latter being manufactured, for various other uses, of the proportions and strength required, and being obtainable in the open market at lower cost than that of manufacturing special shapes, which special shapes can, however, be adopted to a greater or less extent, and can also be made at a comparatively small cost and to the stand-

ard patterns under which they may be applied. It will be seen that these conditions have been governing ones in the application of my invention herein set forth, as exemplified in the construction described and shown.

In the practice of my invention I provide a truck-frame having two side-frame members 1 1, each of which is composed of a metal plate, preferably of steel, which is pressed into form substantially as shown in Fig. 1—that is to say, with a deep central portion and tapering therefrom to end portions of less depth—and is flanged on its upper and lower sides. The plate of each side member forms a beam of channel-section, as shown in Fig. 4, the metal of which is cut out about its central portion to form an opening 3, through which the elliptic springs 17 may be inserted and removed and through which their outer ends protrude when in service. An outwardly-turned flange, as shown, is preferably formed around the opening 3. The axle-boxes 2 are located under the ends of the side-frame members and are connected thereto by axle-box bolts 26, fitting close to or against the bodies of the side-frame members and passing through openings in the flanges thereof, through bolt-holes in the boxes, and through the pedestal tie-bars 27.

The axle-boxes are preferably of the Master Car-Builders' standard construction, and carry in the usual manner the journal-bearings 7 of the axles 8, on which the wheels 9 are secured. In order to conform to the length of the axle-boxes used and to enable the webs of the side-frame members to be located as nearly as may be in line with the middle of the journals, widening-plates 6, made of sections of half T-bars, may, if desired, be riveted to the inner sides of the side-frame members 1.

The side-frame members are connected by transoms 10, each of which is preferably a channel-bar of steel. The transoms are secured to the side-frame members 1 by vertical angle-bars 4, riveted to the webs of the transoms and to the bodies of the side frames, and by plates 5, of substantially triangular form, riveted to the top flanges of the transoms and of the side-frame members 1, the transoms being set so that their top flanges shall be in



line with the tops of the side-frame members at the middle portions thereof.

Spring-supports 15, each of which is a continuous plate of metal, in the instance shown  
5 bent into trough-section with side flanges at its top and having downwardly-turned end flanges to provide proper stiffness, are located between the transoms 10, and their outer end  
10 flanges are riveted to the side-frame members 1, in which, as before stated, suitable openings 3 are formed, adapted to admit of the insertion and removal of the springs 17. The  
15 spring-supports 15 are secured laterally by rivets passing through their top side frames to the lower flanges of the transoms 10, and the springs 17, which are in this instance of the elliptic type, rest on the upper faces of the spring-supports. The spring-supports are in this case made of trough-section, as  
20 shown, to conform to the required height or depth of the bolster and springs, but may obviously be reduced in depth or brought to the form of a flat plate with end stiffening-flanges, accordingly as the height of the bolster and springs or either may be reduced or  
25 the position of the center plate be raised, or both.

The bolster 18, which is supported at or near its ends on the springs 17 and fits freely  
30 between the transoms 10, is composed of two metal bars, which are preferably I-beams, as shown, and of steel, and are connected near their ends by interposed distance-pieces 19, each formed of a short piece of an I-beam, the flanges of which are riveted to the webs  
35 of the bolster-bars. Chafing-pieces 21, formed of Z-bars, are riveted to the webs of the bolster-beams in position to abut against the inner faces of the transoms. A center plate 13, of any suitable and preferred construction, is  
40 secured to the upper flanges of the bolster-beams and serves to receive a center plate 14 on the car-body in the usual manner. Pressed steel center plates, as indicated in the drawings, are preferably adopted.

Side bearing-plates 23, of any preferred construction, are riveted to the upper flanges of the bolster-beams at a proper distance from the ends of the bolster.

30 It will of course be understood that the truck is to be provided with some suitable and preferred brake apparatus, which may be connected in the usual manner, and which, as it does not constitute any part of my present invention, is not herein set forth.

55 It will be observed that with the exception of the side-frame members and spring-supports, both of which can be readily and comparatively inexpensively pressed into desired  
60 form, and the top connecting-plates of the transoms and side members, which are cut out of plain plates, the remainder of the frame and bolster members and their connections are commercial shapes of standard sections,  
65 such as are made for the market by leading manufacturers, and are obtainable in large or small quantities, as desired, at such prices

as render their utilization very desirable in effecting economy in the cost of construction of car-trucks, as hereinbefore described.

It will be further obvious that the structure above described may be modified to a greater or less degree in matters of detail without departure from the characteristic features of my invention, and I do not therefore desire to  
75 limit myself to the specific forms of the several members which are described and shown in the instance exemplified.

I claim as my invention and desire to secure by Letters Patent—

1. In a car truck, the combination, substantially as set forth, of a metal plate side frame member, bent into form to present a deep central portion and end portions of less depth, with upper and lower flanges, a pedestal tie  
85 bar fitting against the central portion of the side frame member, axle boxes interposed between the end portions of the side frame members and the pedestal tie bar, and axle box bolts passing through the flanges of the  
90 side frame member, and through the axle boxes and pedestal tie bars.

2. In a car truck, the combination substantially as set forth, of two metal plate side frame members, metal beam transoms of commercial rolled shape, connections, of commercial  
95 rolled shape, between the side frame members and the transoms, and a metal beam bolster, of commercial rolled shape, supported on the transoms.

3. In a car truck, the combination, substantially as set forth, of two metal plate side frame members, having upper flanges, metal beam transoms interposed between said side frame members, connections, of commercial  
100 rolled shape, between the side frame members and the transoms, and plates riveted to the upper flanges of the side frame members and of the transoms.

4. In a car truck, the combination, substantially as set forth, of two metal plate side frame members, having upper flanges, metal beam transoms interposed between said side frame members, plates riveted to the upper  
105 flanges of the side frame members and of the transoms, and angle bars riveted to the webs of the transoms and to the bodies of the side frame members.

5. In a car truck, the combination, substantially as set forth, of two metal plate side frame members, commercial shape channel bar transoms connecting said side frame members, metal plate spring supports having  
110 transverse stiffening flanges at their ends, said spring supports being riveted laterally to the lower flanges of the transoms and having their outer end flanges riveted to the side frame members, springs resting on said spring supports, and a metal beam bolster supported on said springs.

6. In a car truck, the combination, substantially as set forth, of a metal plate side frame member having upper and lower flanges, a pedestal tie bar, axle boxes interposed be-  
115



tween the end portions of the side frame member and the pedestal tie bar, widening pieces of half T section riveted to the side frame member above the axle boxes, and axle box bolts passing through the flanges of the side frame member and through the axle boxes and pedestal tie bar, substantially in the central transverse plane of the journal bearing of the axle box.

7. In a car truck, a metal beam bolster composed of two bars of commercial rolled I section, connected, at or near their ends, by sections of commercial rolled shape, and having chafing pieces of Z bar section riveted to its sides, substantially as set forth.

8. In a car truck, the combination, substan-

tially as set forth, of a metal plate side frame member, which is pressed or bent into form to present a deep central portion and end portions of less depth, with flanges on its upper and lowersides and a central opening adapted to admit of the insertion and removal of springs, a pedestal tie-bar, axle boxes fitting between the end portions of the side frame and the pedestal tie-bar, and pedestal bolts connecting the side frame member, axle boxes, and pedestal tie-bar.

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Witnesses:

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