

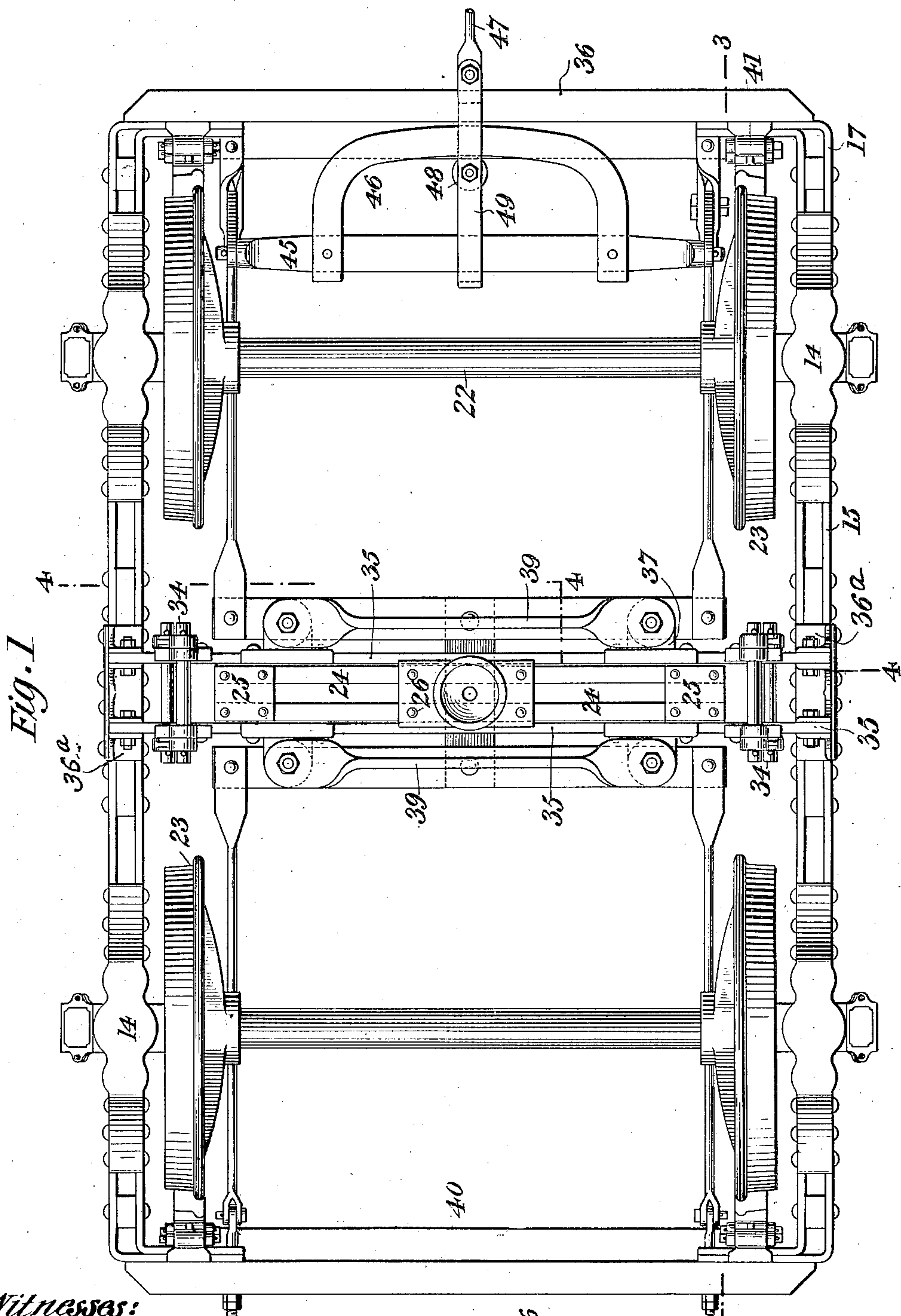
(No Model.)

4 Sheets—Sheet 1.

E. PECKHAM.
CAR TRUCK.

No. 604,784.

Patented May 31, 1898.



Witnesses:
Raphael Vetter
W. C. Pinckney

Edgar Peckham Inventor

(No Model.)

4 Sheets—Sheet 2.

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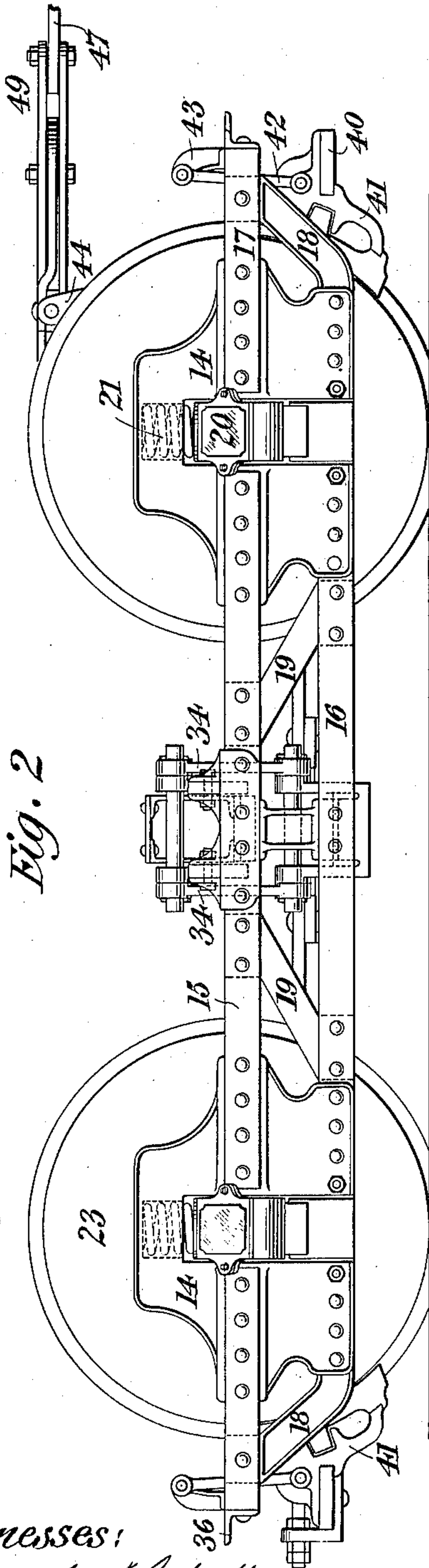


Fig. 2

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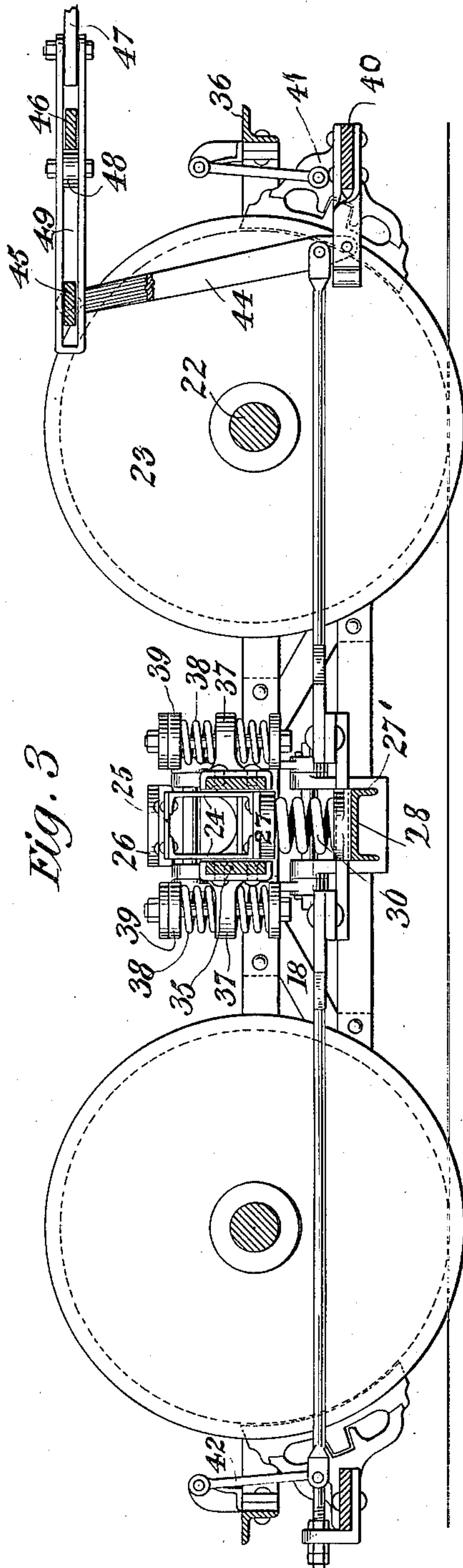


Fig. 3

Inventor
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(No Model.)

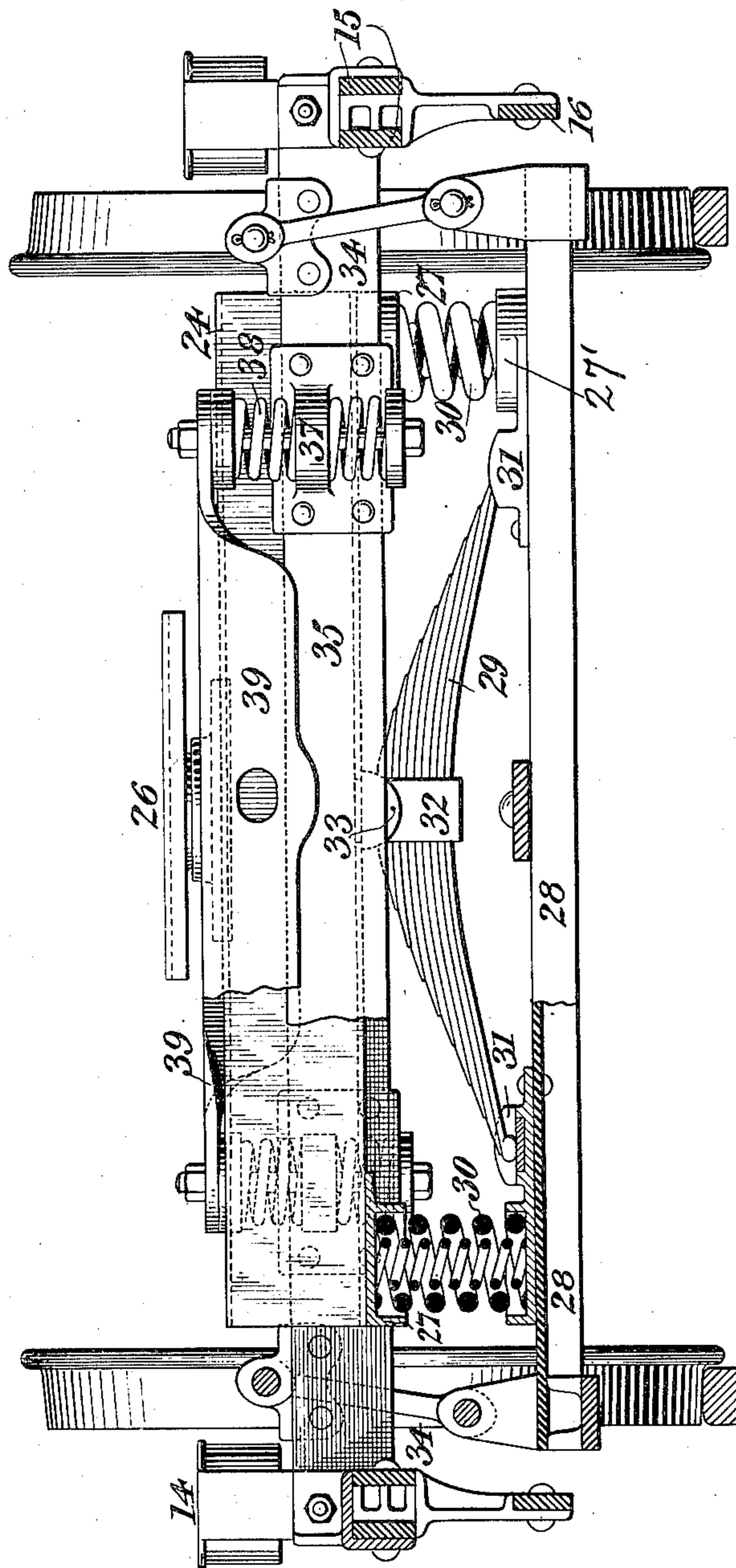
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Fig. 4



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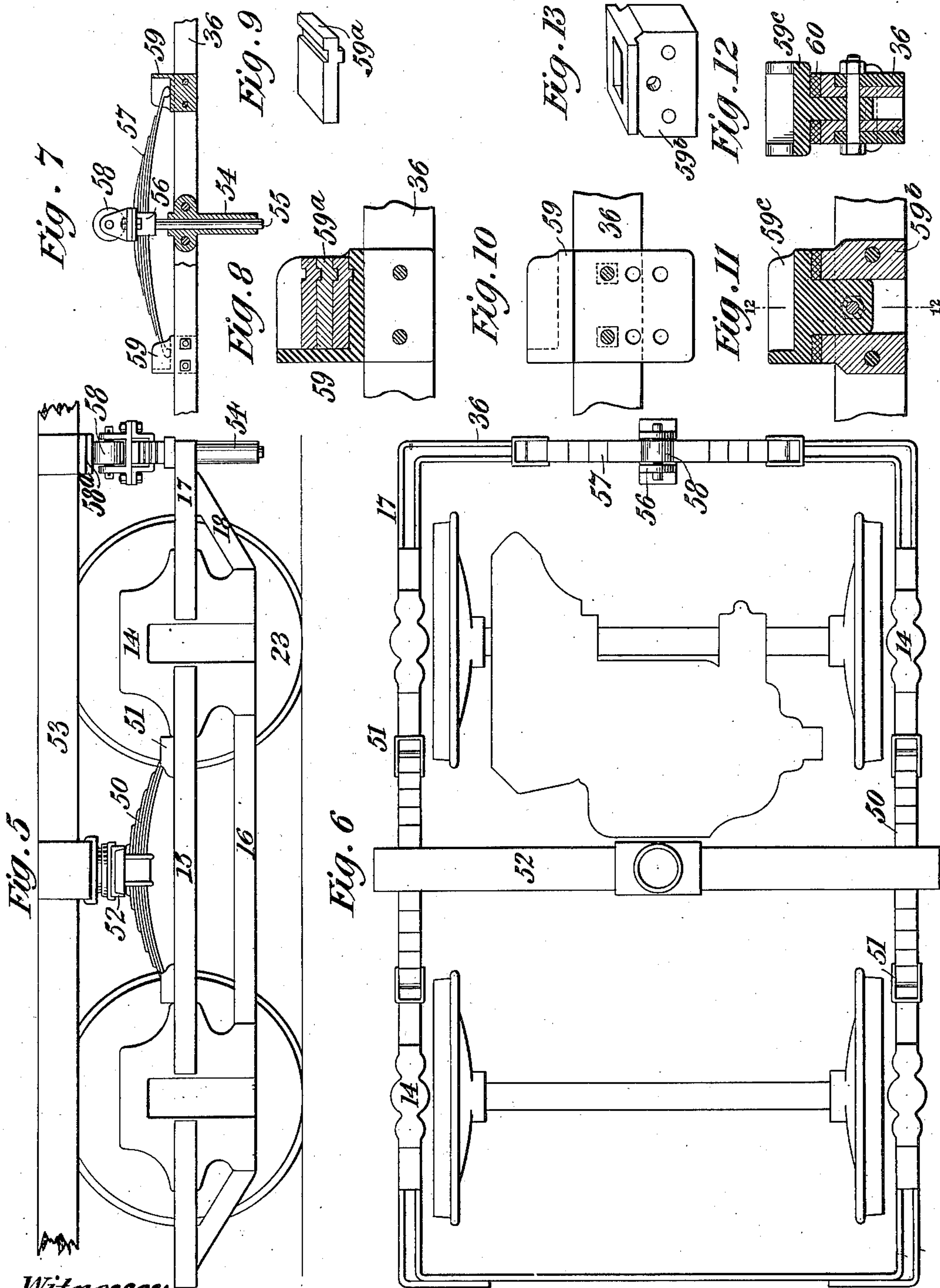
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Inventor

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UNITED STATES PATENT OFFICE.

EDGAR PECKHAM, OF NEW YORK, N. Y.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 604,784, dated May 31, 1898.

Application filed August 4, 1897. Serial No. 647,094. (No model.)

To all whom it may concern:

Be it known that I, EDGAR PECKHAM, a citizen of the United States, and a resident of New York, county and State of New York, have invented certain new and useful Improvements in Car-Trucks, of which the following is a specification.

This invention relates to improvements in car-trucks particularly intended for heavy elevated or suburban electric cars. It is also adapted for cable and other street railways.

The truck relates to the class known as "double" trucks, employed for supporting long car-bodies, the car-body being mounted upon a pair of the trucks, which are equipped with compound brake-lever appliances.

The object of the present improvements is to provide a truck particularly adapted for supporting heavy cars made use of in high-speed service, and the parts are therefore heavily constructed.

My improvements comprise a certain novel construction of the side frames intended to afford great strength to the truck and render it capable of sustaining the weight of the car-body mounted upon a center-bearing bolster; also novel means of supporting the center-bearing swing-bolster on the truck; also novel means of obtaining increased traction on the driving-wheels of the truck, and also means for insuring an even application of the brakes when running through a curve.

My present improvements are illustrated in the accompanying drawings, which form part of this specification, and wherein like parts are indicated by like numerals of reference in the several views, and wherein—

Figure 1 is a plan view of the truck embodying the invention. Fig. 2 is a side elevation of the truck shown in Fig. 1. Fig. 3 is a longitudinal sectional view on the line 3 3 of Fig. 1, certain parts being broken away. Fig. 4 is a transverse sectional view on the line 4 4 of Fig. 1. Fig. 5 is a side elevation of a truck, illustrating certain features hereinafter described. Fig. 6 is a plan view of Fig. 5, and Figs. 7 to 13 show details pertaining to Figs. 5 and 6.

Referring to the drawings, it will be seen that the side frames comprise the yokes or pedestals 14, upper longitudinal beams 15, preferably duplex, as shown, and which con-

nect the yokes 14 together near the center of their vertical height, and lower longitudinal beams or trusses 16, connecting said yokes together at their bottoms, also end beams 17, connected to the yokes at the front on the same plane as beams 15, and the under truss-beams 18 extending from the outer lower ends of the yokes 14 upward to the end beams 17.

The truck has a short wheel-base, and the side frames are constructed to afford great strength, the beams consisting of soft steel hot-riveted to soft-steel pedestals, into which the upper beams are inlaid before riveting. The lower beam 16 is secured by rivets in pockets cast in the lower sections of the pedestals. Between the lower and upper beams 15 and 16 of each side frame is secured a bridge-truss 19, riveted to said beams and braced against the lower sections of the pedestals. The side frames trussed as shown renders it possible, in a truck having longitudinal beams connecting the pedestals together, to locate the car-body-supporting bolster at the center of the wheel-base, the bridge-truss giving to the side frames the requisite strength to sustain the weight of the car-body with safety.

Within the yokes 14 the journal-boxes are arranged to operate in the usual manner, and above the tops of the journal-boxes are placed spiral springs 21, as shown in dotted lines, Fig. 2, the said springs entering recesses in the top member of the yokes 14 and serving to spring-cushion the truck on the journal-boxes, and thus assist in preventing the pounding of the rail-joints. The axles of the truck are indicated at 22 and the wheels at 23.

At the longitudinal center of the truck-frame there is located the swing-bolster 24, composed of two channel-bars set on edge and held together by being riveted to the bearing-plates 25, the swivel-plate 26, and the spring-sockets 27. The bolster 24 is carried upon the spring-plank 28, being supported thereon by a system of springs comprising the half-elliptic spring 29 and the spiral nest-springs 30. The half-elliptic spring 29 has its ends loosely seated in pockets 31 and is provided centrally with a strap 32, having a concave depression in its top, which receives a convex-bearing 33, attached at the bottom of the swing bolster, thus providing a flexible

connection between the bolster and said spring. Spring-caps 27', to receive the spiral nest-springs, are also provided on the spring-plank 28, and are preferably formed integral with the pockets 31 for the half-elliptic spring.

The bolster of the car may be provided with side bearing-plates adapted to rest on the bearing-plates 25 of the swing-bolster 24 to admit of a limited rocking motion of the car, governed by the stiffness of the spiral nest-springs 30, and thus add greatly to the ease of riding, since it permits the wheels on one side of the truck to rise independently of the car-body.

The spring-plank 28 is suspended by four links 34, two at each side of the truck, the links being carried by the two transverse bars or transoms 35, which rest in pockets 36^a in the side beams 15 of the truck-frame. The transverse bars or transoms 35 are rigidly bolted to the side beams 15, and thus serve to hold the transverse end beams 36 of the truck-frame in rigid alinement. The transverse bars or transoms 35 also serve as a guide for the swing-bolster 24, preventing it from moving in a direction longitudinal with the car. To the transverse bars or transoms 35 are also riveted pockets 37, which receive the spiral springs 38, upon which rests the support 39 for the nose of the motor.

The four links 34 have normally a slight outward inclination, as shown in Fig. 4. The effect of this is to raise that side of the car-body toward which the bolster 24 moves when the truck passes onto a curve, thus giving the effect of an additional superelevation of the outside rail of a curve.

The brake-rigging is fitted with flat brake-beams 40, equipped with the brake-shoes 41. The brake-shoes 41 are pivoted to links 42, which are in turn pivoted to brackets 43, supported on the transverse end beams 36. To the inner sides of the brake-shoes at one end of the truck there are pivoted at each side of the truck the upright levers 44, and to the heads of these levers is secured the equalizer or floater 45. The floater 45 is provided with a segmental piece 46, on which the rod 47 (leading to the sway-bar, secured to the bottom of the car at its longitudinal center) works through a roller 48, journaled in the strap 49, embracing the floater 45 and segmental piece 46, the said roller 48 being so mounted with relation to the inner segmental curve of the piece 46 as to insure an even application of the brakes when the car, mounted upon the pair of trucks, is rounding curves.

The means for obtaining increased traction or the two wheels supporting the motor, known as the "driving-wheels," will be seen in Figs. 5 to 13. In Figs. 5 and 6 the car-body-supporting springs 50 are of the half-elliptic type and have their ends seated in pockets 51 on the side beams 15 of the truck-frame and are connected to the center-bearing bolster 52, upon which the car-body (in-

dicated at 53) rests. Spiral springs may of course be employed in lieu of the half-elliptic springs for supporting the bolster on the truck.

At one end of the truck-frame, preferably the inside end, its transverse beam 36 is provided with the bracket 54, having an elongated portion serving as a guide for bolt 55, which is connected by a strap or frame 56 to the half-elliptic spring 57. In the frame 56, centrally over the top of the half-elliptic spring 57, is journaled the roller 58, which is adapted to come in contact with a plate or bolster 58^a, attached to the under side of the car-body.

The ends of the half-elliptic spring 57 seat in pockets 59, riveted to the end beam 36. These pockets 59 may be made in various ways with a view of rendering them adjustable, so that the height of the surface upon which the ends of the half-elliptic springs seat may be increased or decreased, as desired, to increase or decrease the tension upon the half-elliptic spring 57. In Figs. 8 and 9 the pockets 59 are adapted to receive a series of plates 59^a, so grooved as to interlock with the inside surface of the pocket and also with one another, and thus prevent their displacement. In Fig. 10 the shank of the pocket 59 is provided with a series of holes to adapt it to be connected to the end beam 36 at different elevations. In Figs. 11 to 13 the device is made in two parts, one part 59^b being riveted to end beam 36 and adapted to receive the shank of pocket 59^c and be secured in place by a bolt, as shown. The pocket 59^c thus formed is easily removable, and between it and the fixed part 59^b there is placed a washer of indurated fiber 60, as shown. With a series of pockets 59^c of varying heights the desired tension on spring 57 may be obtained by selecting a pocket of the requisite height. With these several forms of pockets, which are modifications of one another, the tension on the half-elliptic spring 57 may be varied, as desired, and thus the traction on the truck-wheels regulated.

It will be observed that the traction-regulating appliances are located outside the wheels of the truck at the extreme end of the truck. By this arrangement, in a truck equipped with a center-bearing bolster, weight is thrown on the end of the truck outside the wheels, which are between the bearing of the bolster and the end of the truck-frame, thus rendering it possible, by suitable adjustment of the tension of the half-elliptic spring of the traction-regulating appliances, to put about seventy-five per cent. of the traction on said wheels and without interfering with the freedom of action of the car-body. It will further be observed that the motor is suspended from the axle of that pair of wheels which is between the center-bearing bolster and that end of the truck upon which the traction-regulating appliances are secured. By this arrangement the greatest amount of traction is ob-

tained on the driving-wheels located between the two points indicated, as they thus receive in addition to the weight of the car body the weight of the motor.

5 By supporting both the spiral and the half-elliptic springs near the ends of the spring-plank the strain is lessened at the center of the plank, while the bolster is spring-supported both at its ends and center.

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

1. In a car-truck, the combination with the side frames, of a car-body-supporting bolster, 15 a spring-plank suspended by links below the bolster, a half-elliptic spring and a pair of spiral springs arranged on the spring-plank and supporting the bolster, the ends of said half-elliptic spring bearing on the spring-plank toward its ends and at its middle supporting said bolster, and the spiral springs also bearing on the spring-plank near its ends.

2. In a car-truck, the combination with the side frames, of a car-supporting bolster, a 25 plank suspended below the bolster, spiral springs and a half-elliptic spring between the plank and bolster, and a yielding bearing between the bolster and said half-elliptic spring.

3. In a car-truck, the combination with the 30 side frames, of a car-body-supporting bolster, a spring-plank and two pairs of links whereby said spring-plank is suspended beneath the bolster, and a series of springs all bearing on said plank at or near its ends, a part 35 of said springs directly supporting the bolster at or near its ends, and the rest of said springs supporting the bolster at its center.

4. In a car-truck, the combination with the side frames, of a car-supporting bolster, a 40 plank suspended below the bolster, spiral springs between the plank and bolster, and a half-elliptic spring bearing on the plank near its ends and against the bolster at its center, and a pair of transverse bars or transoms one on each side of the bolster and supported by the truck.

5. In a car-truck, the combination with the side frames, of a car-body-supporting bolster composed of two channel-bars set on edge and 50 held together by bearing-plates at their ends and a suitable plate in the middle, two transverse bars or transoms secured in pockets on the side frames of the truck, two pairs of links suspended from said transoms beyond 55 the ends of the bolster, a spring-plank supported by said links beneath the bolster, and a series of springs arranged on said spring-plank and sustaining the bolster, one of said springs bearing on the spring-plank near its ends and bearing against the bolster at its 60 center.

6. In a car-truck the combination, with the side frame, of a bolster, links depending from supports on the truck-frame and having a 65 slight outward inclination from the point of support, a plank supported by the links at their lower ends, and springs bearing on said

plank near its ends, one of said springs supporting the bolster at its center.

7. In a car-truck, the combination with the 70 side frames and transverse bars or transoms 35 seated in pockets on the side frames, of a car-body-supporting bolster arranged between said transoms, two pairs of links carried by said transoms beyond the ends of the 75 bolster, a spring-plank suspended below the bolster by said links, a half-elliptic spring the ends of which bear on said spring-plank near its ends, the center of the bolster resting on said spring and two spiral nest-springs 80 seated in pockets attached to the bolster and the spring-plank near the ends of the latter.

8. In a car-truck, the combination with the transverse end beam connecting the side frames together, of a half-elliptic spring suit- 85 ably mounted on said end beam and provided on its top with a rolling wheel or the like adapted to coact with the car-body sill against which said wheel normally bears for the purpose set forth.

9. In a car-truck the combination with the 90 transverse end beam of the truck-frame, of a half-elliptic spring mounted on said end beam, adjustable pockets for the end of said half-elliptic spring and means on top of said spring 95 adapted to coact with the car-body sill as set forth.

10. In a car-truck, the combination with the transverse end beam of the truck-frame, of a 100 half-elliptic spring suitably mounted on said end beam, adjustable pockets for the ends of said half-elliptic spring, and a rolling wheel or the like journaled on top of said spring and adapted to coact with the car-body sill for the purpose set forth.

11. In a car-truck, the combination with the 105 end beam, of a half-elliptic spring adjustably supported on said beam and provided on its top with a rolling wheel, and pockets for the ends of said half-elliptic spring to rest in, and 110 removable portions adapted to fit said pockets to vary the height of their seating-surfaces for the purpose set forth.

12. The combination with a car-truck equipped with a center-bearing car-body-sup- 115 porting bolster, of a spring traction-regulating appliance located on the end of the truck outside the wheels, whereby increased traction is obtained on the wheels between the bolster and said end of the truck.

13. In a car-truck, the combination with a center-bearing bolster and the driving-wheels, of a half-elliptic spring adjustably supported on the end beam of the truck outside the driving-wheels and provided with a rolling wheel 125 on its top surface for the purpose set forth.

14. In a car-truck, the combination with a center-bearing bolster and a traction-regulating appliance supported upon the end beam of the truck-frame, of a pair of wheels and their axle between said bolster and traction-regulating appliance on said end beam, and a motor supported on the axle of said wheels.

15. In a car-truck, the combination with the

driving-wheels and a motor supported on the
axle of said wheels, of a center-bearing bol-
ster supported on the truck-frame and a half-
elliptic spring adjustably supported on the
5 end beam of the truck-frame, outside the
driving-wheels, and provided with a rolling
wheel at its top, for the purpose set forth.

Signed at New York, in the county and State
of New York, this 2d day of August, 1897.

EDGAR PECKHAM.

Witnesses:

C. L. MALCOLM,
G. H. BOWERS.