

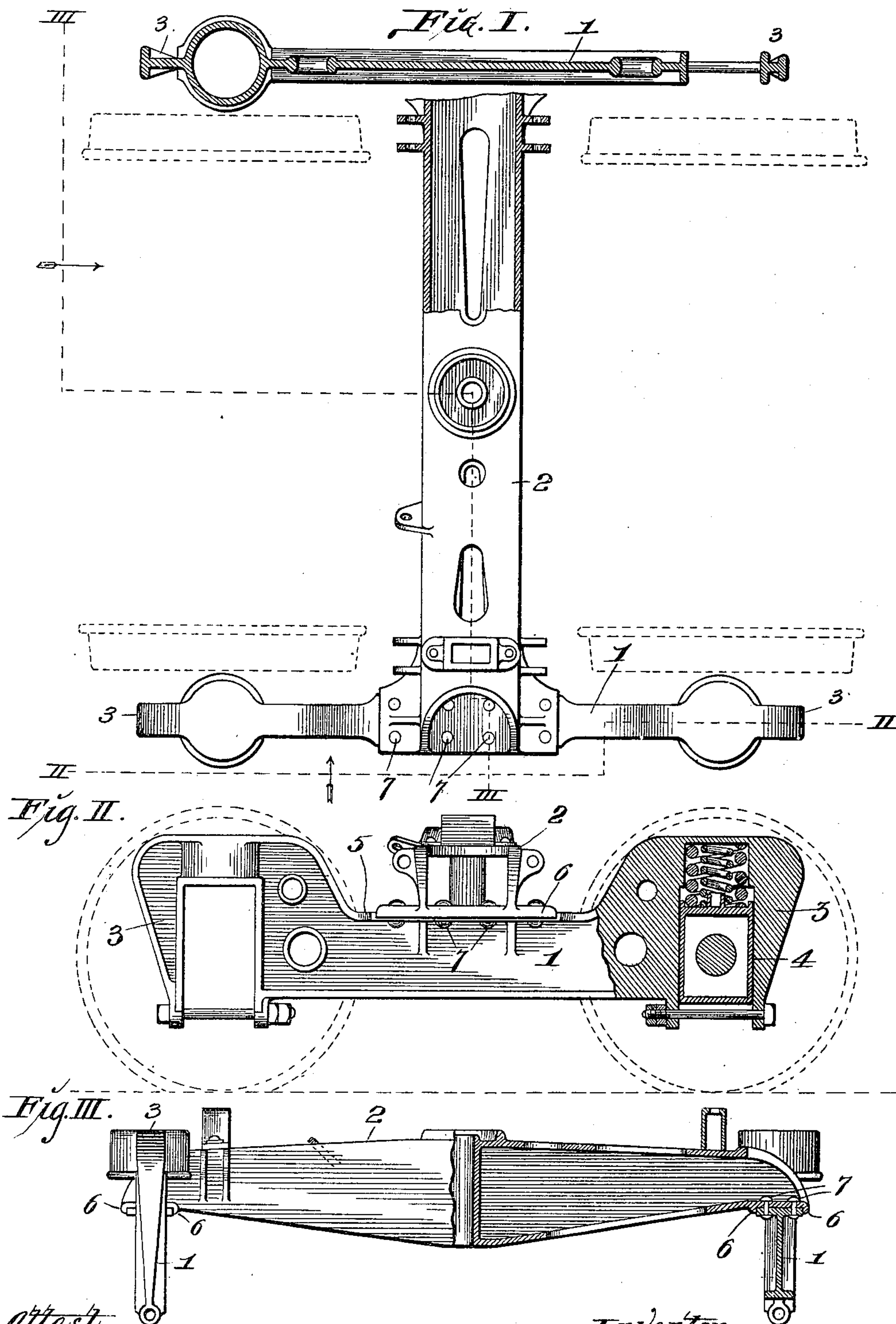
No. 670,162.

Patented Mar. 19, 1901.

E. W. PALMQUIST.  
CAR TRUCK.

(Application filed Feb. 24, 1900.)

(No Model.)



attest  
W. P. Smith  
E. J. Knight

Inventor -  
Eric W. Palmquist.  
By Thos. B. Porter atty's.



# UNITED STATES PATENT OFFICE.

ERIC W. PALMQUIST, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE SHICKLE,  
HARRISON & HOWARD IRON COMPANY, OF SAME PLACE.

## CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 670,162, dated March 19, 1901.

Application filed February 24, 1900. Serial No. 6,337. (No model.)

*To all whom it may concern:*

Be it known that I, ERIC W. PALMQUIST, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have  
5 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.

10 Heretofore it has been the practice to secure the ends of the bolsters to the inner sides or faces of cast side frames of car-trucks, to which there are two serious practical objections: first, connecting bolts or rivets have to be  
15 relied upon to take much of the strain and hold the parts together, and, second, owing to the shape of the parts it is very difficult and often impossible to fit the parts by machine-work, this work having to be done by hand  
20 chipping and filing, which is expensive compared with machine-work.

The object of my invention is to so form the side frames that the bolster may rest on top of the side frames, while at the same time the  
25 points of bearing between the bolster and the side frames is substantially on line with the tops of the axle-boxes, the result being that any horizontal strain of the car-wheels on the side frames when the train is in motion does  
30 not produce a twisting strain between the side frames and the bolsters.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

35 Figure I is a view of my improved truck, part in plan and part in horizontal section. Fig. II is a view part in side elevation and part in vertical section, the section being taken on the line II II, Fig. I. Fig. III is a  
40 view part in front elevation and part in vertical section, the section being taken on the line III III, Fig. I.

Referring to the drawings, 1 represents the side frames; 2, the truck-bolster; 3, the pedestals of the side frames, and 4 the axle-boxes fitting in the pedestals.

I prefer to make the side frames of I-beam form and the bolster of box form, although in these respects I do not wish to be limited.

50 The side frames are formed with central depressed portions 5, upon which the ends of

the bolster rest, these depressions being sufficient to bring the point of contact between the bolster and the side frames substantially on line with the upper faces of the axle-boxes, 55 as shown in Fig. II. The ends of the bolster are formed with ribs 6, that engage the upper flanges of the side frames, as shown in Fig. III, and to prevent any vertical movement of the bolster with relation to the side frames I 60 bolt or rivet its ends to the upper flanges of the side frames, as shown at 7, Fig. III. By thus forming the side frames with depressed central portions the bolster is permitted to rest on top of the side frames, thus permitting 65 machine-work in fitting, as the contact-points are plain flat surfaces, while at the same time the bolster is not elevated above or substantially above the upper faces of the axle-boxes, so that any horizontal strain of the truck- 70 wheels on the side frames is not imparted to the joints between the side frames and the bolster. In designing a truck it is essential that the points of bearing or the joints between the bolster and the side frames be so 75 located that the twisting strain on the joints is reduced to a minimum. The force acting on the truck produced by the sidewise motion of the wheels is brought to bear, I have discovered, upon the side frames on a line 80 with the top of the axle-boxes. The joints between the bolster and the side frames should therefore be upon the line of the top of the axle-boxes. If the joints referred to are above this line, the effect of the lateral force 85 of the truck-wheels when the train is in motion would be to tilt the side frames from their positions and throw them at an angle vertically to the bolster, tending thereby to twist and break the joints between the bolster and 90 the side frames. If the joints are below this line, the effect would be the same; but if the joints are directly upon the line the center of pressure coincides directly with the center of support, and the tendency on the application 95 of the force to the axle-boxes would be to make the contacting faces of the joints slide upon each other without tilting the side frames out of their position at right angles to the bolster. 100

I claim as my invention—

1. In a car-truck, the combination of side

frames provided with pedestals to receive the axle-boxes, and a bolster resting on top of the side frames; the central portions of said side frames being depressed to bring the point  
5 of contact between the bolster and the side frames substantially on a horizontal line with the tops of the axle-boxes, substantially as set forth.

10 2. In a car-truck, the combination of side frames having pedestals to receive the axle-boxes, and a bolster resting on top of and secured to the side frames; said side frames having depressed central portions to bring the point of contact between the bolster and

the side frames substantially on line with the 15 tops of the axle-boxes, and said bolster having ribs 6 engaging the side frames, substantially as set forth.

3. In a car-truck, the combination of side frames, and a bolster fitted to rest on top of 20 and be bolted to the side frames and having ribs 6 engaging said frames laterally, substantially as set forth.

ERIC W. PALMQUIST.

In presence of—

E. S. KNIGHT,

N. V. ALEXANDER.