

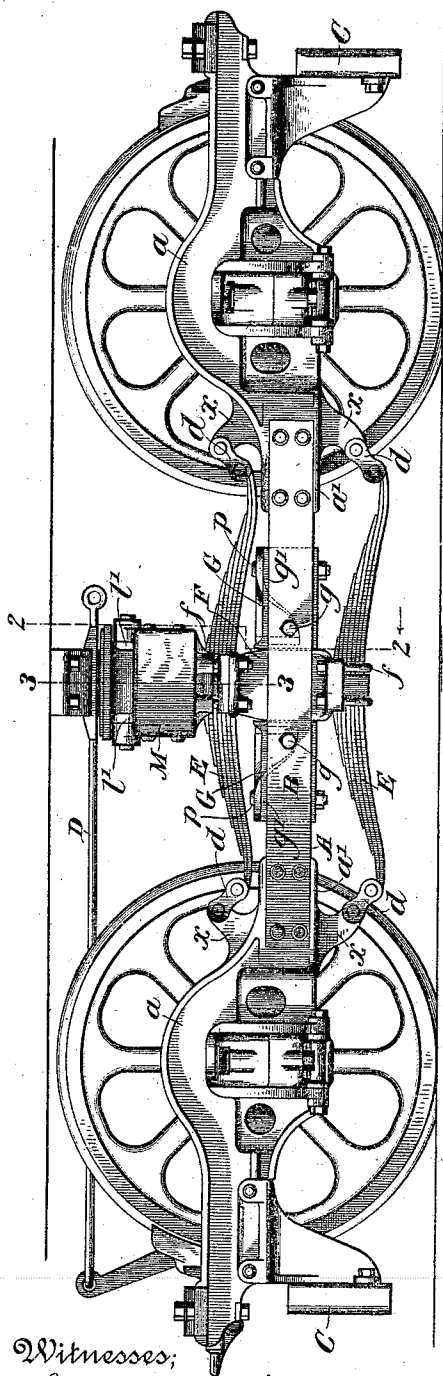
(No Model.)

2 Sheets—Sheet 1.

W. S. G. BAKER.  
CAR TRUCK.

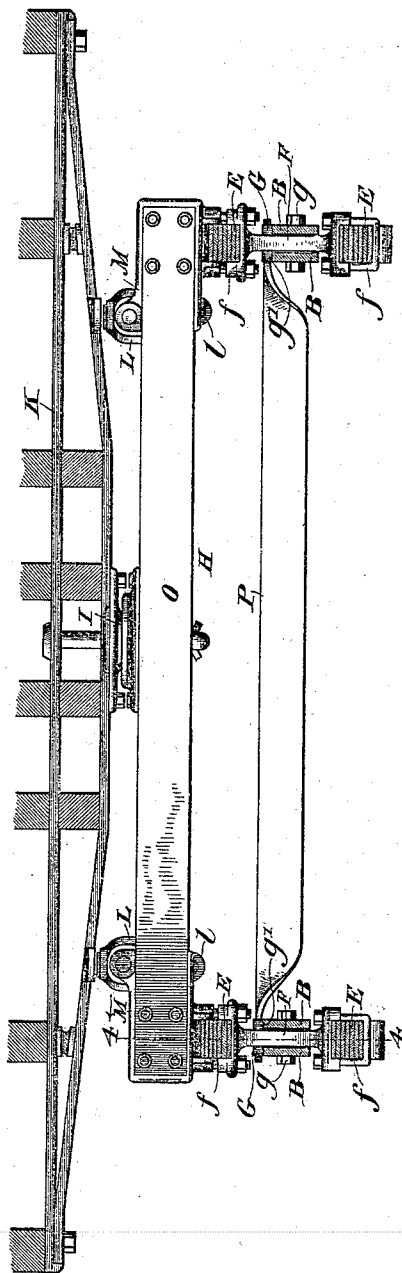
No. 553,298.

Patented Jan. 21, 1896.



Witnesses;  
*J. M. Witherow*  
*B. H. Miller*  
Fig. 1.

Fig. 2.



Inventor  
*William S. G. Baker,*  
By *his* Attorneys  
*Richard Davidson Wright.*

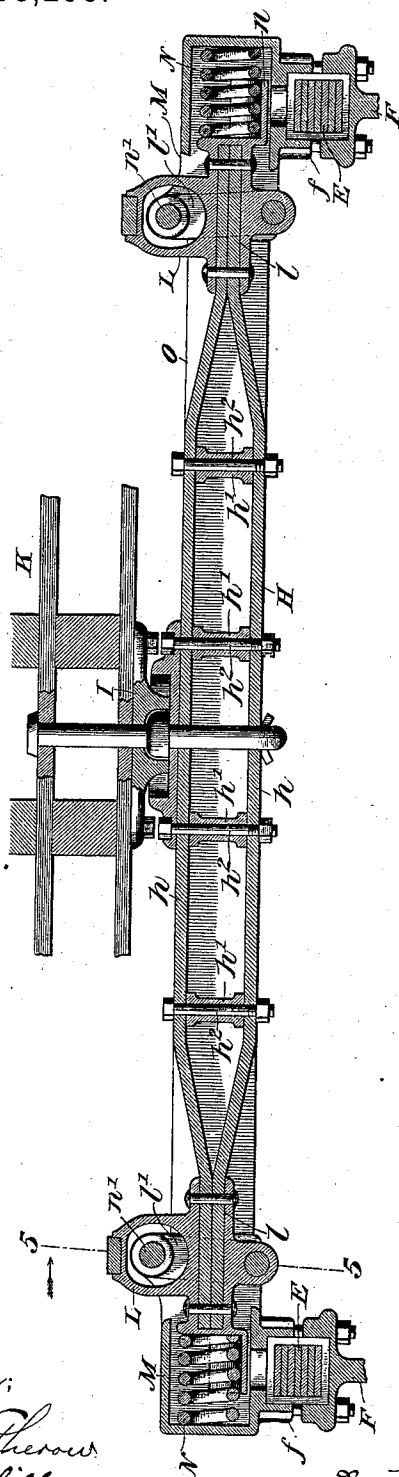
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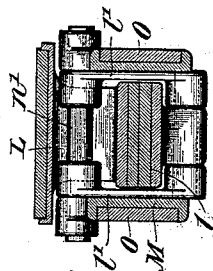
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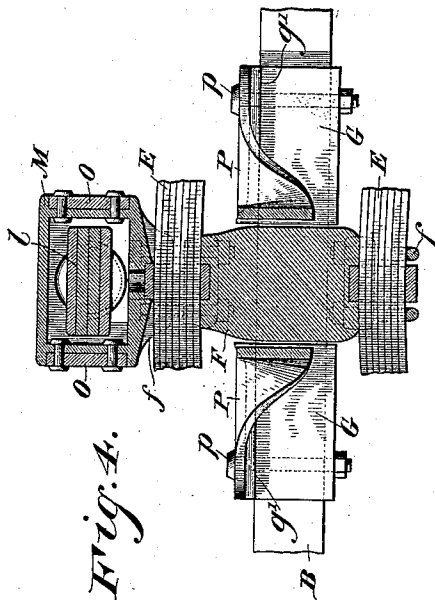


Witnesses;

J. M. Withrow.  
B. H. Miller.



*Fig. 5.*



*Fig. 4.*

Inventor,  
*William S. G. Baker,*

By *his* Attorneys

Baldwin Davidson Wright

# UNITED STATES PATENT OFFICE.

WILLIAM S. G. BAKER, OF BALTIMORE, MARYLAND.

## CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 553,298, dated January 21, 1896.

Application filed October 7, 1895. Serial No. 564,903. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM S. G. BAKER, a citizen of the United States of America, residing at Baltimore, (Fulton Junction,) in the State of Maryland, have invented certain new and useful Improvements in Car-Trucks, of which the following is a specification.

My present invention more especially relates to trucks in which a bolster is mounted on the truck-frame between the wheels and is pivotally connected at its center with the car-body. This class of trucks, commonly called "center-bearing trucks," has long been used on steam-railway cars, but is now to some extent being used on electric cars, their use being demanded owing to the fact that long car-bodies now extensively used require eight instead of four wheels in order to properly support the weight not only of the car-body but also of the motor mechanism, and in order that the wheels may follow the track when turning a short curve a pivotal connection is made between the bolster and the car-body.

The object of my invention is to improve the class of trucks above mentioned by supporting the weight of the car-body as near to the axles as possible by springs which afford ease of movement and freedom from jolting, &c.

A further object of my invention is to so arrange the bolster on the springs that a clear space for mounting the motor mechanism may be afforded, and the bolster may be allowed to swing with the car-body relatively to the truck.

In the accompanying drawings, Figure 1 shows a side elevation of a truck equipped with my improvements. Fig. 2 shows a transverse section of the truck on the line 2 2 of Fig. 1. Fig. 3 shows, on an enlarged scale, a transverse section on the line 3 3 of Fig. 1. Fig. 4 shows, on an enlarged scale, a transverse section on the line 4 4 of Fig. 2; and Fig. 5 shows a transverse section on the line 5 5 of Fig. 3.

The wheels, axles, and axle-boxes may be of any suitable construction.

The truck-frame is composed of two side frames A, similar in construction to each other and suitably cross-connected. Each side frame consists of two yokes *a*, one at each

end of the truck, extending over the axle-boxes and connected with each other by two wrought-metal plates B, the ends of which are seated in recesses on the opposite sides of the inwardly-projecting arms *a'* of the yokes *a*. The plates are securely bolted to the castings, as shown, and are arranged a suitable distance apart to allow a clear space for a purpose hereinafter specified.

The life-guards C are secured to the side frames in the usual way, and any suitable brake mechanism D may be employed.

Each yoke *a* is cast with two brackets *x*, one above and the other below the sockets in which the plates B are secured. To these brackets are hinged links *d*, which are in turn pivotally connected with the ends of semi-elliptical leaf-springs E, one above and the other below the plates B of the side frame, on each side of the truck. The springs on each side are rigidly connected together at their center by an upright plate F, by means of suitable fastening devices *f*. The plate F is free to move vertically between the plates B but is prevented from twisting, and end-wise movement is prevented by means of blocks G, arranged at opposite ends of the plate F and secured to the plates B by bolts *g*. These blocks have flanges *g'* at their upper edges that rest on the top of the plates B.

The bolster H is connected by a center-bearing I of well-known construction to the car-body K, and the opposite ends of the bolster rest on the two upper springs E on opposite sides of the truck. I may either provide a rigid connection between the springs and the bolster, or I may provide a flexible one, to enable the bolster to swing, to provide an ease of movement, especially when passing curves. I prefer to construct and arrange the bolster, as shown in the drawings. As shown particularly in Fig. 3, the bolster is formed of upper and lower plates *h*, held apart by thimbles *h'* and secured by the bolts *h<sup>2</sup>*. The ends of the plates at each end of the bolster are brought together and bolted or riveted in a seat *l* in a casting L, which is suspended by links *l'* from a casting M, mounted on the springs. The casting M is connected with the devices *f*, which secure the upright plate F to the upper spring E. It is formed with a housing within which is arranged a coiled spring N,

resting in a holder *n* on the end of the casting L and taking the end-thrust of the swinging bolster H. The links *l* which suspend the casting L are, as clearly shown in Figs. 3 and 5, 5 pivotally connected with the bolt *n*, mounted on lugs forming part of the casting M. The castings M on opposite sides of the bolster are connected rigidly by two plates O, the ends of which are seated in recesses or sockets in the 10 sides of the castings M, as indicated in Fig. 5. This rigid connection between the castings holds the springs in proper position while enabling the bolster to have the proper end-wise swinging movement.

15 By these improvements, the bolster is elevated above the plane of the axles and above the top of the side frames, thus affording a clear space for the electric motors and their supporting mechanism.

20 I have shown in Figs. 1 and 2 cross-bars P, which are designed to support the ends of the electric motors. The opposite ends of these motors may be supported, as is usual, by the axles. Each cross-bar P is preferably 25 a flat twisted bar, as shown, each end being preferably secured by a vertical bolt *p* to a block G. This detail of construction, however, is not important. By employing two 30 half-elliptical springs, one above and the other below the side frame of the truck on each side and connecting the ends of the springs to the side frames near the axles, I am enabled to take the strain off from the truck-frame at the center and apply it near the axles with a re- 35 duced amount of leverage. The two springs divide the weight and afford an ease of movement to the truck that it would not have if a single spring were used sufficient to support the weight.

40 I claim as my invention—

1. The combination with the wheels, axles, and axle boxes of the side frames, the bolster above the side frames, two semi-elliptical leaf springs on each side of the truck arranged in 45 the same vertical plane and connected together by a vertically moving connection, flexible connections between the ends of the springs and the side frames, and connections between the bolster and the springs on the op- 50 posite sides of the truck.

2. The combination with the wheels, axles and axle boxes, of the side frames, the bolster located above the side frames, the two semi-elliptical leaf springs on each side of the truck 55 one above and the other below the side frame, a rigid connection between said springs and

pivotal connections between the ends of the springs and the side frames near the axles.

3. The combination with the wheels, axles and axle boxes, of the side frames, each com- 60 posed of yokes extending over the axle boxes and formed with the link-supporting lugs, a pair of plates having a space between them and secured at each end in sockets in the yokes, a bolster above the side frames, semi- 65 elliptical springs rigidly connected together on each side of the truck, and pivotal connections between the ends of the springs and the link-supporting lugs.

4. The combination with the wheels, axles 71 and axle boxes, of the side frames, each composed of yokes, and plates with a space between them as described, a pair of semi-elliptical leaf springs one above and the other be- 75 low the side frame on each side of the truck, a plate extending between the plates of the side frame and adapted to move vertically therein, connections between the upper and lower ends of this plate and the semi-elliptical springs, blocks secured between the plates 80 on opposite sides of the vertical spring-connecting plate and a bolster supported by the springs on opposite sides of the truck, substantially as described.

5. The combination with the wheels, axles 85 and axle boxes of the side frames, the semi-elliptical springs supported on the side frames between the wheels, the castings mounted on the springs above the plane of the side frames and connected rigidly together, as described, 90 and the bolster pivotally connected with the car body and suspended from the castings by swinging links, substantially as described.

6. The combination with the wheels, axles 95 and axle boxes, of the side frames, the semi-elliptical springs supported on the side frames between the wheels, the castings mounted on the springs above the plane of the side frames, and connected rigidly together, as described, 100 the bolster pivotally connected with the car body and suspended from the castings by swinging links and the springs arranged in housings of the castings and bearing against the ends of the bolster, substantially as de- 105 scribed.

In testimony whereof I have hereunto sub-  
scribed my name.

WILLIAM S. G. BAKER.

Witnesses:

DANIEL W. POWELL,  
A. E. BAKER.