

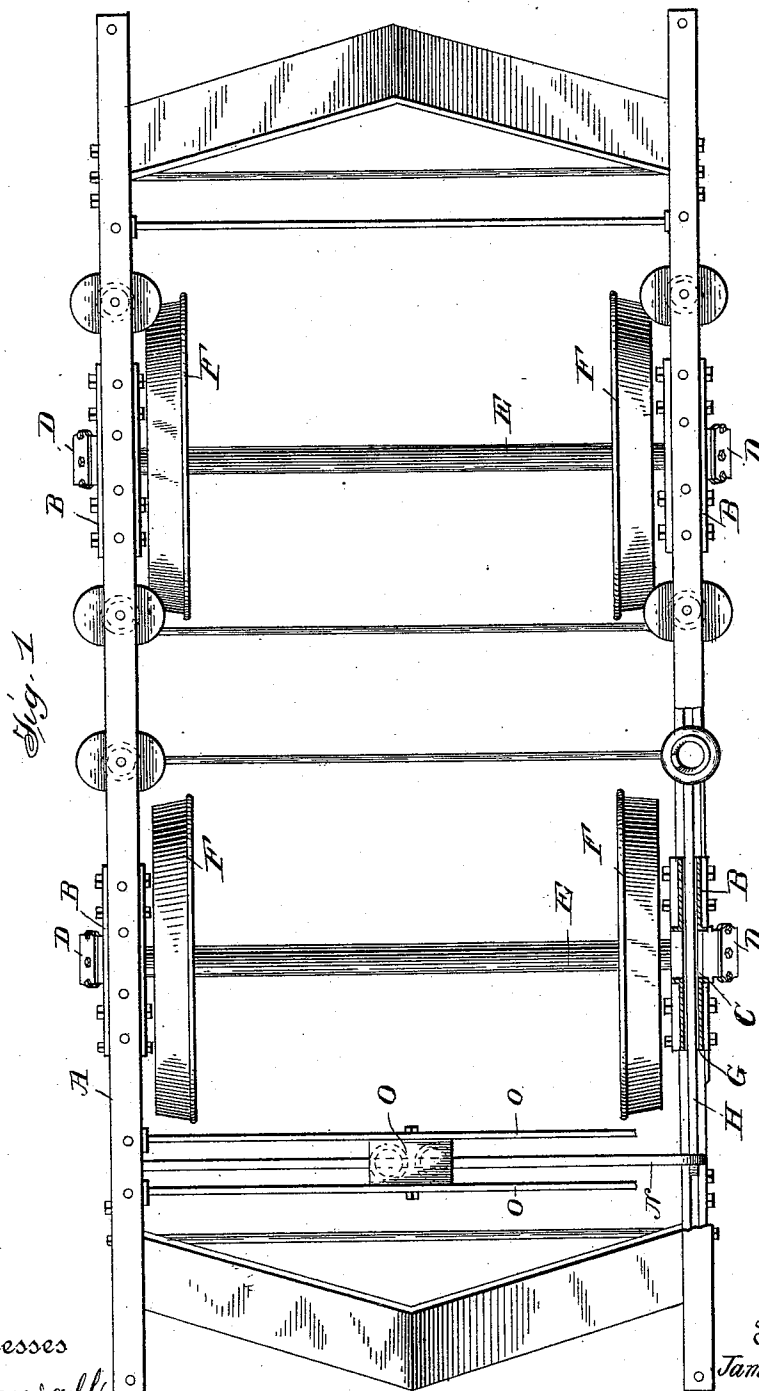
(No Model.)

2 Sheets—Sheet 1.

J. HENDERSON.
CAR TRUCK.

No. 472,923.

Patented Apr. 12, 1892.



Witnesses
A. R. Cornwall.

C. P. Clwell.

Inventor
James Henderson

By his Attorneys
Napkins & Atkins

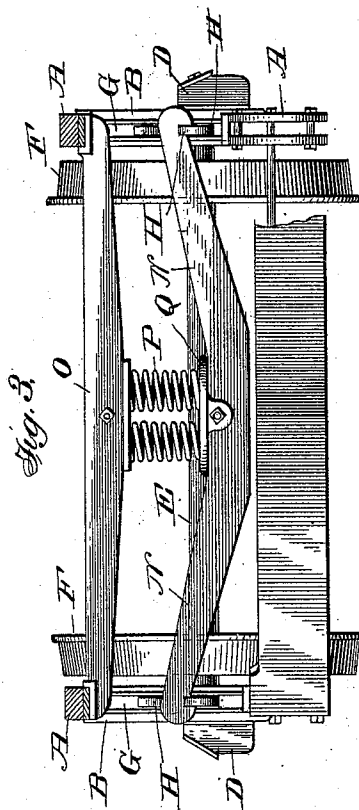
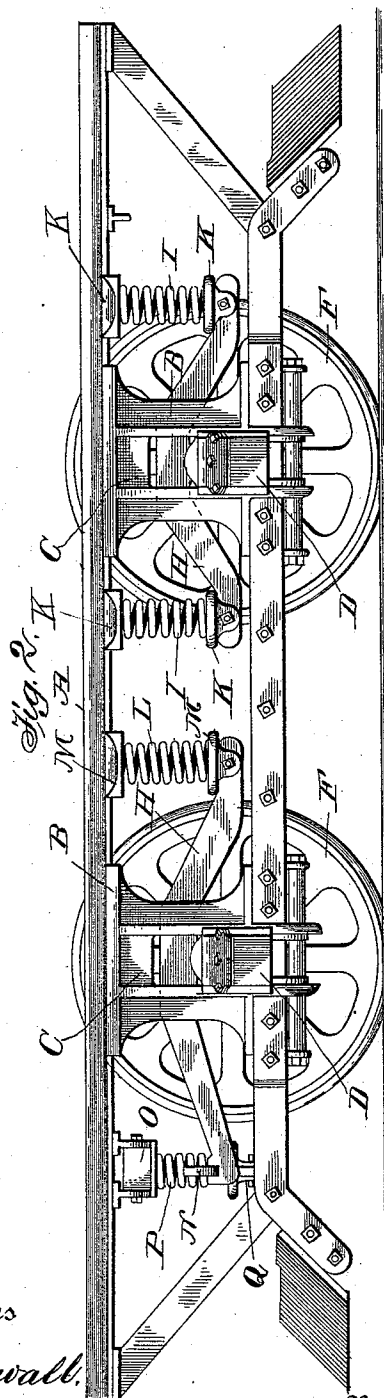
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2 Sheets—Sheet 2.

J. HENDERSON.
CAR TRUCK.

No. 472,923.

Patented Apr. 12, 1892.



Witnesses
F. R. Cornwall.

C. P. Edwell.

Inventor
James Henderson

By *W. S. Attorneys*

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UNITED STATES PATENT OFFICE.

JAMES HENDERSON, OF THREE RIVERS, MICHIGAN, ASSIGNOR TO THE
SHEFFIELD VELOCIPEDE CAR COMPANY, OF SAME PLACE.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 472,923, dated April 12, 1892.

Application filed July 10, 1891. Serial No. 399,068. (No model.)

To all whom it may concern:

Be it known that I, JAMES HENDERSON, of Three Rivers, county of St. Joseph, State of Michigan, have invented certain new and useful Improvements in Car-Trucks, of which the following is a specification, reference being had to the accompanying drawings.

My invention is specially applicable to use in street-cars; and it consists in certain improvements in the means for carrying a load—as, for instance, a car-body upon wheels—whereby the vertical motion and end oscillation of the car-body or load are materially reduced and twisting strain incident to service is avoided, whereby the tendency of the car in use to lose the quality of easy motion is neutralized.

In the accompanying drawings, Figure 1 is a plan view, partly in section. Fig. 2 is a side elevation. Fig. 3 is an end view, with part of the frame removed to more clearly show the connections of the yoke.

Referring to the letters on the drawings, A indicates a truck-frame, whose parts are suitably assembled and braced in any desirable manner. It is adapted, as usual, to carry a load—such as a car-body, for instance—and is provided with pedestals B, whose vertical side openings C receive the boxes D of the axles E, that carry the wheels F, upon which the truck moves. The pedestals may be made of separate pieces or may be cast in one piece, so as to form longitudinal vertical slots G, through which are passed equalizing-bars H, that ride upon the top of the boxes. These equalizing-bars, whose purpose and effect are well understood in the art, are divided into two sets, one at each end of the truck. In one set they are cushioned against springs I, which are seated in chairs K, oppositely located upon the truck-frame and upon opposite ends of the equalizing-bars, respectively. Each one of the other set of equalizing-bars is cushioned at one end against a spring L, seated in chairs M, as above described, while the other ends of these bars are joined or yoked together by a cross equalizing-bar N, that overlaps the ends of that set of equalizing-bars, and is fitted in place upon them in any suitable manner.

The effect of the first equalizing system named above is to carry the frame or car-body as upon two points, while the effect of the second system is to carry it as upon one point. The combined effect, therefore, of the two sets of equalizing systems is to carry the entire body upon two sets of wheels, as if supported thereon at three points.

O indicates a cross-beam secured at opposite ends to the frame of the truck directly over the cross equalizing-bar N. Between the bar and this beam are interposed one or more springs P, two being shown in the drawings. These springs bear upwardly against the bottom of the beam O and are seated in a chair Q, pivotally secured to the middle of the cross equalizing-bar N.

The effect of the arrangement above described is to distribute each shock to which the truck-wheels are subjected by means of the equalizing-bars away from one side of the car, and thereby prevent the sudden and violent swaying that is uncomfortable to passengers in the car.

The only construction of vehicle that will conform to any surface without twisting strain and the uneven motion consequent thereon is one that carries its load on three points. My invention renders this form of construction practicable in car-trucks. It is for this reason that I employ the cross equalizing-bar at only one end of the track. If employed at both ends, the effect would be to produce a two-point suspension that would give rise to too much swaying side motion in the car-body. By employing the three-point bearing I prevent the swaying side motion, at the same time reducing vertical motion and end oscillation.

What I claim is—

1. In a car-truck, the combination, with a single frame and two pairs of wheels, of two sets of equalizing systems, one set supporting the frame over one pair of wheels, as upon two points, and the other set supporting it over the other pair of wheels, as upon one point, whereby a three-point support upon a complete equalizing system is effected, substantially as set forth.

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

single frame, two pairs of wheels, and their axles, of a four-point connection between one pair of wheels and the frame, and a three-point connection between the other pair of
5 wheels and the frame, substantially as set forth.

3. The combination, with a pair of wheels and axle, of equalizing-bars over the opposite ends of the axle, adapted to sustain a car at
10 two points, a cross equalizing-bar yoking the

other ends of the side equalizing-bars together and provided with a central sustaining-point to support the car or frame in its middle, substantially as set forth.

In testimony of all which I have hereunto 15 subscribed my name.

JAMES HENDERSON.

Witnesses:

EDWIN H. HENDERSON,
JAS. W. ARNOLD.