(No Model.)

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W. S. ADAMS.

CAR TRUCK.

No. 538,858. Patented May 7, 1895.

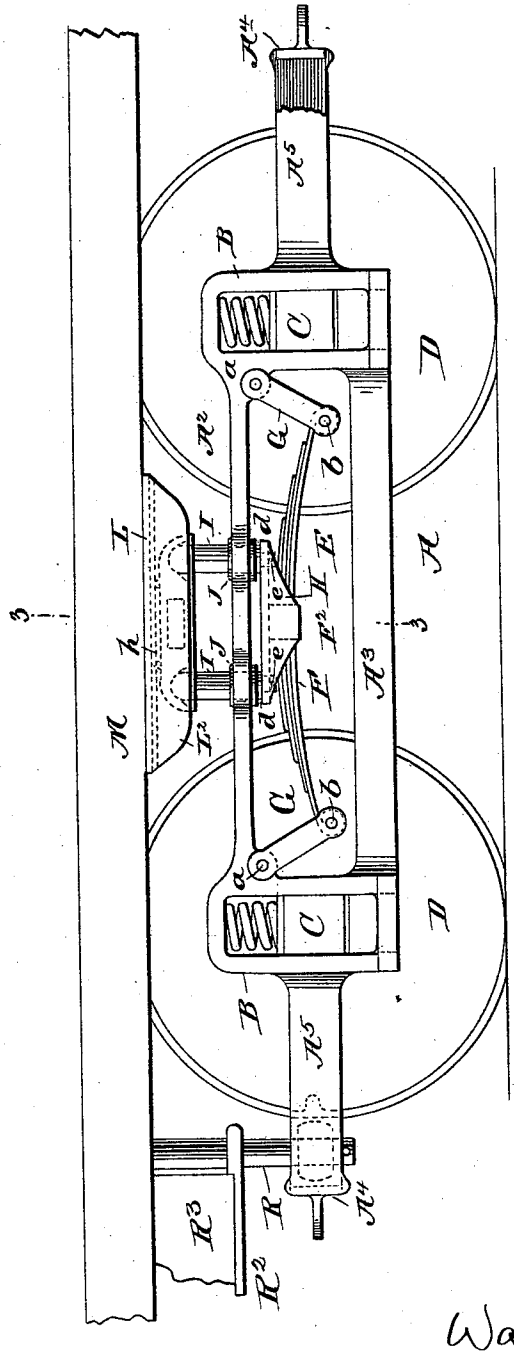

Fig. 1.

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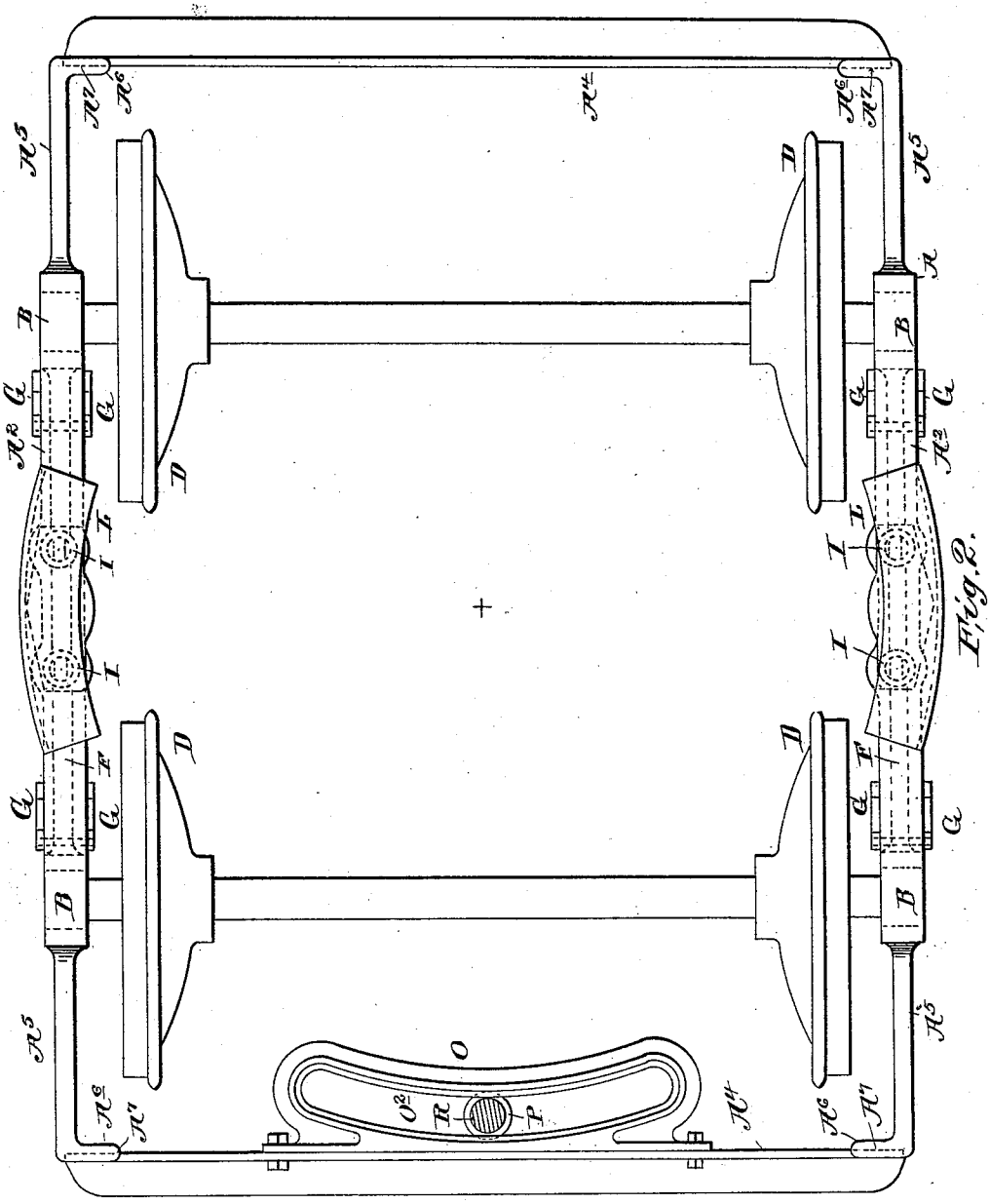

Fig. 2.

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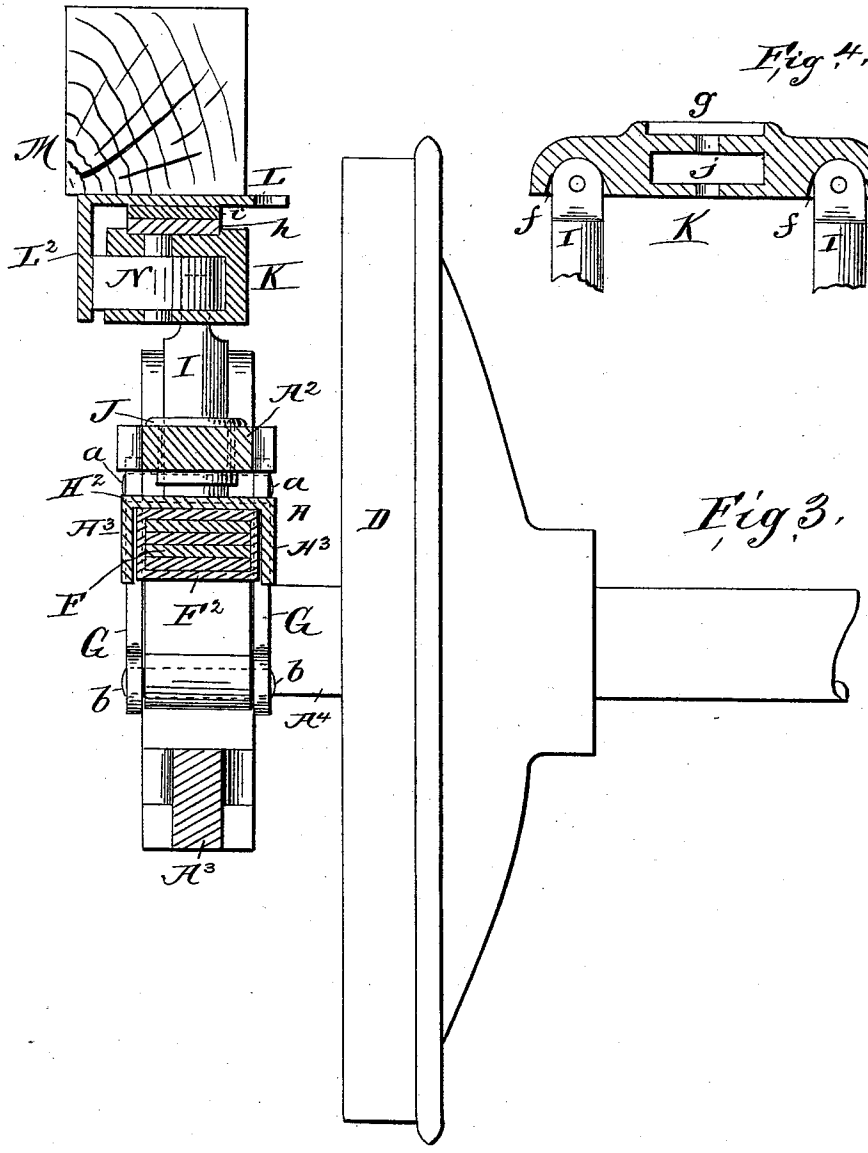

Fig. 3.

Fig. 4.

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UNITED STATES PATENT OFFICE.

WALTER S. ADAMS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO JOHN A. BRILL, OF SAME PLACE.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 538,858, dated May 7, 1895.

Application filed February 16, 1895. Serial No. 538,612. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. ADAMS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Car-Trucks, of which the following is a specification.

One object of this invention is to provide improved means for resiliently supporting a car body upon a car truck, and a further object is to improve certain details of construction of the axle box frame.

The invention consists in an axle box frame carrying a semi-elliptical spring, having its concave surface facing downwardly, and spring posts sustained by said spring between its ends, said posts being guided by the upper chord of the axle box frame, and devices for connecting the car body with said posts.

The invention also consists in the novel details of improvement and the combinations of parts that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is a side elevation of a car-truck embodying my improvements, showing a portion of a car-body mounted thereon. Fig. 2 is a plan view of the car-truck. Fig. 3 is an enlarged cross-section illustrating my improvements on the plane of the line 3 3 in Fig. 1; and Fig. 4 is an enlarged detail, partly in section, of the spring-posts and the bearing.

In the accompanying drawings, in which similar letters of reference indicate corresponding parts in the several views, the letter A indicates an axle box frame. B are its axle box yokes; C, the axle boxes, and D the wheel, which may all be of suitable or desired construction.

In the example shown the axle box frame A has an upper chord A^2 and a bottom chord A^3, forming the side bars between the yokes B and defining a space E, in which part of my improvements may be located.

At F is a semi-elliptical spring, the leaves of which are shown bound together by a strap F^2, said spring being located beneath the upper chord A^2 and within the space E. The ends of the spring F are so supported that they may move under the bending influence of a superposed car body.

In the example shown the ends of the spring F are supported by links G, which are pivotally carried by the axle box frame. By preference the links G are arranged in pairs, the ends of the spring F being located between the links. The links G are supported at their upper ends by pivots *a* carried by the chord A^2, and at their lower ends said links are connected by pivot bars *b*, upon which the ends of the spring F rest, being preferably curved around said pivots. By this arrangement the spring F is pivotally supported, so as to move endwise under the weight and motions of the car body, the links G turning on their pivots for this purpose.

Upon the spring F, at its central portion, is mounted a saddle H, adapted to have a slight rocking motion thereon, said saddle being shown composed of a top plate H^2 having depending side webs H^3 forming a channel to receive the spring F.

At I, I are spring posts resting on the saddle H, and movably connected therewith. The posts I have reduced ends which pass through the top of the saddle and form shoulders *d* that rest on the saddle H, and may be held in position by cotter pins *e* passing through the reduced ends of the posts I beneath the saddle H. The apertures in the saddle H may be enlarged to give freedom of movement to the posts I.

The posts I are journaled in the upper chord A^2 of the axle box frame, bushings J being preferably provided for said posts, the chord A^2 being enlarged to receive said bushings. Provision is made for allowing the posts I to have a slight longitudinal or lateral movement relatively to the chord A^2, either by making enlarged openings in said chord for said bushings, or by making the bushings elastic, or else by allowing play between the posts and the bushings, so as to permit slight movement of said posts under the rocking movements of the car body.

The car body is to be supported on the posts I, I by devices which may be of ordinary or suitable construction. In the drawings the posts I are shown connected by a casting K, which forms the truck bearing, and has recesses *f*, in which the upper ends of the posts I may be pivoted. (See Fig. 4.)

The casting K has a top recess *g* in which

is located a friction plate *h*. L is a guide plate secured to the under side of the side sill M of a car body. (Not shown.) The plate M is curved on an arc derived from the pivotal center *x* (Fig. 2) of the car truck, and from the plate L depends a web L^2 following the curve of the plate L, and to the plate L is secured a rub plate, which bears on the friction plate *h*.

N is a roller pivotally carried in a recess *j* in the casting K to bear against the depending plate L^2 to limit and regulate the lateral movement of the car body relatively to the truck, and to properly guide the truck in its pivotal movements beneath the car body.

The chord A^2, posts I, I and saddle H form the pedestals for the truck bearing.

One of the cross bars A^4 of the truck or axle box frame A is shown provided with a casting O having a curved slot O^2, in which works a friction roller P loosely journaled on a draw bar R. The draw bar R depends from the car body and may be strengthened by a brace R^2 extending from said bar to a support R^3 carried by the car body. This draw bar makes a drawing connection between the car body and the axle box frame, which acts in all positions of the truck relatively to the car body. This I do not claim herein.

My improved axle box frame is constructed as follows: From the yokes B, B extend bars A^5 having integral and inwardly turned ends A^6 provided with recesses A^7, the outer ends of which are closed. The cross bar A^4 is T shaped, its flat web lying in said recesses. The parts A^2, A^3, B, A^5 and A^6 are preferably made in a single piece of metal, as by forging, and the parts A^4 and A^6 may be fastened together by rivets or bolts. The cross bar A^4 is restrained from transverse movement by the closed ends of the recesses A^7.

By means of my improvements the car body is resiliently supported at the center of the axle box frame, so as to have free up and down, or rocking motion, and it will be understood that the devices described will be located on both sides of the frame A.

I do not limit my invention to the precise details of construction shown and described, as they may be varied without departing from the spirit of my invention.

I claim—

1. The combination of an axle box frame, with a semi-elliptical spring supported thereby, spring posts supported directly upon said spring between its ends, guides for the posts above the spring, and means for connecting a car body with said posts, substantially as described.

2. The combination of an axle box frame having a side bar, with a semi-elliptical spring supported at its ends on said frame and below said bar and having its concave surface facing downwardly, spring posts on said spring and guided by said side bar, and means for connecting said posts with a car body, substantially as described.

3. The combination of an axle box frame having a side bar, with a semi-elliptical spring pivotally carried by said frame, a saddle on said spring, posts supported by said saddle, and means for supporting a car body on said posts, substantially as described.

4. The combination of a truck frame, with a semi-elliptical spring carried by said frame, a saddle having a movable connection with said spring, posts supported by said saddle, and a bearing having a movable connection with said posts, substantially as described.

5. The combination of a truck frame having a top bar, with a semi-elliptical spring carried by said frame, a movable saddle on the spring, posts supported by the saddle and guided by the top bar, and a bearing movably connected with said posts, substantially as described.

6. The combination of an axle box frame having a side bar, with a semi-elliptical spring, links pivotally carried by said frame and supporting the ends of said spring, a saddle on said spring, posts supported by said saddle and guided by said side bar, and means for supporting a car body on said posts, substantially as described.

7. The combination of an axle box frame having a side bar, with a semi-elliptical spring, links arranged in pairs and pivotally suspended from said frame, pivots *b* connecting said links in pairs, the ends of said spring being supported by said pivots, a saddle on said spring, posts supported by said saddle and guided in said side bar, and means for supporting a car body on said posts, substantially as described.

8. The combination of an axle box frame having a side bar, with a semi-elliptical spring movably supported by said frame, a saddle mounted on said spring and consisting of a top plate having depending webs forming a channel to receive said spring, posts having reduced ends received in apertures in said saddle, said posts being guided in said side bar, and means for supporting a car body on said posts, substantially as described.

9. An axle box frame having side bars and yokes, extensions A^5 from said yokes provided with integral and inwardly extending ends A^6 having recesses A^7, and cross bars A^4 located in said recesses, substantially as described.

10. An axle box frame having side bars and yokes, extensions A^5 from said yokes provided with integral and inwardly extending ends A^6 having recesses A^7, the outer ends of which are closed, and T shaped cross bars A^4 having their flat webs or sides located in said recesses and fastened therein, the closed ends restraining transverse movement of the cross bars, substantially as described.

Signed at Philadelphia, in the county of Philadelphia and State of Pennsylvania, this 21st day of January, 1895.

WALTER S. ADAMS.

Witnesses:
R. S. REED,
R. W. BROADBENT.