

(No Model.)

E. R. ESMOND.
CABLE GRIP CAR TRUCK.

No. 465,659.

Patented Dec. 22, 1891.

Fig. 1

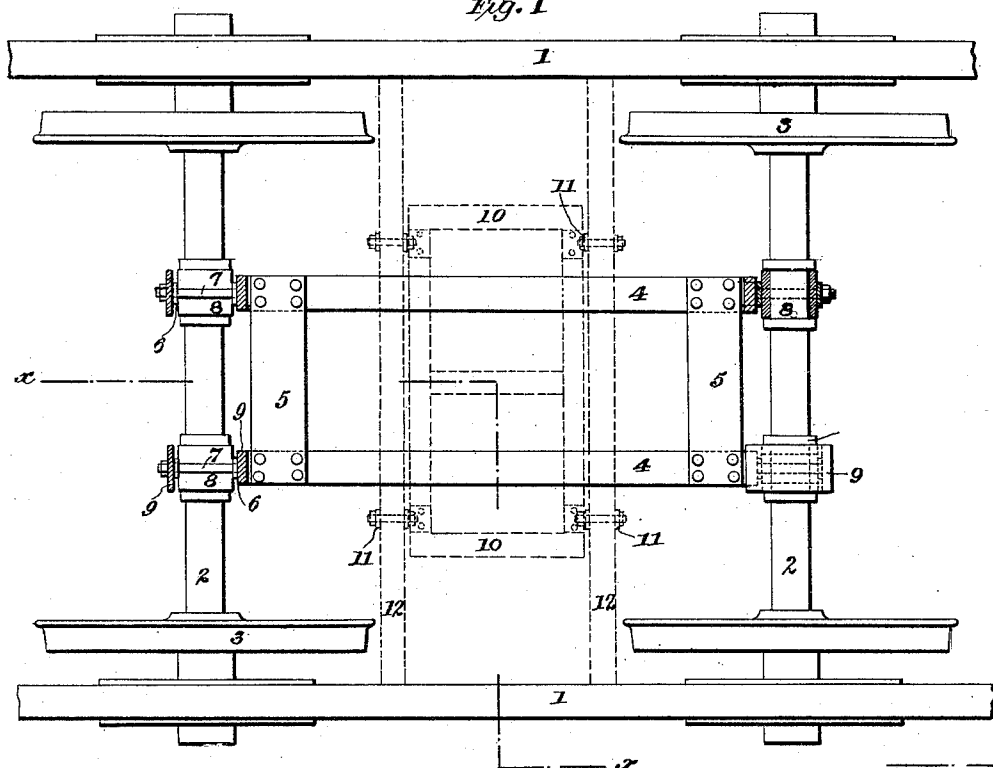
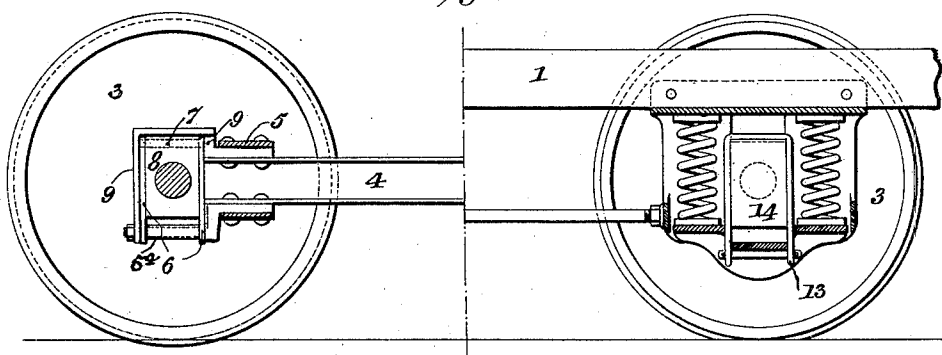


Fig. 2



Witnesses:
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UNITED STATES PATENT OFFICE.

ERNEST RICHARD ESMOND, OF NEW YORK, N. Y.

CABLE-GRIP-CAR TRUCK.

SPECIFICATION forming part of Letters Patent No. 465,659, dated December 22, 1891.

Application filed April 30, 1891. Serial No. 391,070. (No model.)

To all whom it may concern:

Be it known that I, ERNEST RICHARD ESMOND, of the city, county, and State of New York, have invented certain new and useful Improvements in Cable-Grip-Car Trucks, of which the following is a description, reference being had to the accompanying drawings.

This invention relates to means for suspending a cable-grip to a car or car-truck.

It has for its object to so support the grip or parts carrying the grip that the car or truck frame may have free lateral motion to the grip or grip-frame without throwing it out of line with the cable or its being effected by the motions transmitted to the truck or its axles by the unevenness of the road-rails.

The invention consists of a grip-frame adapted to carry a grip and its adjacent or working parts, which frame is hung from the truck by vertical links, there being housings or abutting parts interposed between the grip-frame and the truck, whereby the frame may have free lateral motion relatively to the truck, but is held rigid therewith longitudinally.

In the drawings, Figure 1 shows a plan view of the sills of a car-body with my improved grip-frame attached thereto. Fig. 2 is a side elevation view of the same, parts being sectioned away on plane *xx* of Fig. 1.

In the views, 1 represents a truck-frame or the sills of a car-body; 2, the axles, and 3 the wheels.

Between the axles is hung the grip-frame 4, which frame is here shown as composed of two horizontal bars 4, rigidly connected together by the cross-bars or end pieces 5. Projecting under the axle from each end of this frame are the wrist-pins 5^a, and to these wrist-pins are pivotally attached the lower ends of the arms of the yoke-like or inverted-U-shaped links 6. These links bear pivotally at 7 on the tops of the boxes 8, which boxes are journaled on the axles so that the axles can revolve in them, but are fixed to the axle by collars or other suitable projections from them or the axles, so as to move with the axles when the axles have motion along their axes. 9 indicates the housings of these boxes and links. Each of such housings consists of a strap-like piece 9, attached to the top of one of the bars 4 and shaped to pass over the top of the box and down on the outer side thereof to the

outer end of the pin 5^a, to which it is bolted. By these means the frame 4 and the axle-boxes are held rigidly together as concerns longitudinal motion or motion across the axles, while the axles and the boxes 8 are movable in the housings 9 laterally relative to the frame. In this connection it is to be noticed that as one of the axles is moved laterally to the frame the tops 7 of the links are carried with the axle, while their lower ends turn on the pins 5^a, but do not have any lateral motion, and the reverse takes place if the grip-frame be moved laterally relative to the axles, though it is the former motion that mainly occurs in practice, and against which it is desired to protect the grip-frame. As the axles move relatively to the frame, the vertical distance between the pivotal bearings of the links is varied, and this of course causes the frame to rise and fall; but this is no detriment, because such vertical movement of the frame is too slight to unduly affect the grip and is directly opposed to the transference to the grip of the lateral motion of the axles.

In dotted lines in Fig. 1 I show a grip-frame 10 supported by links 11 on the cross-bars 12 after the same method that the frame 4 is hung to the axles 2.

Preferably I mount the car or truck frame on the axles through the instrumentality of links 13, passing over the axle-boxes 14, the boxes being arranged between housing-pedestals 15, in the manner shown in my United States Patents No. 238,230, dated March 1, 1881, and No. 247,814, dated October 4, 1881. This method is not essential to the operation of the present invention, although it assists in a measure to the more easy carrying of the car, and so of the grip-frame. It will now be seen that whatever be the lateral motion of the car-truck or its axles the grip-frame is not affected thereby, being free to maintain its proper position over the cable and road-bed slot, while yet being held longitudinally rigid with the truck. It is to be particularly noted that when the wheels, either or both pairs, are in a curve their axles are thrust lengthwise toward the inside of the curve relative to the grip-frame, and thus the line of propelling force is nearer the outside wheels than the inside wheels. This action so applies the propelling force that the outside wheels are hastened around the

curve, as is desired, and by the same action the car is brought to follow the track more closely than when the line of propelling force is maintained centrally to the axles. • It will also be
5 seen that by these means the line of the grip-frame is always tangent to the curve of the track, and that therefore the grip, which of course should be centrally supported on the frame, will always be over its cable and will
10 not deviate therefrom. By these means I prevent shock to the grip mechanism from the load or from the track, and also and especially any prying or wrenching, as between the truck or car and grip, resulting in greater
15 life of the cable and cable-grip and easier, lighter running of the car.

What I claim as new is—

1. The combination, with a grip car or truck,
of a grip-frame hung thereon by vertical links,
20 and housings between the grip-frame and the

car or truck, whereby the frame can have lateral motion relatively to the truck or car, but is held longitudinally rigid therewith.

2. The combination, with a grip car or truck, of a grip-frame hung thereon by links, and
25 housings to said links carried on the frame, whereby the frame is laterally movable relative to the car, but is held to have longitudinal motion therewith.

3. In combination with the axles of a car or
30 car-truck, a grip or power frame suspended on the axles by swinging links pivoted to the frame and to boxes on the axles, and housings to said links whereby the frame is permitted lateral but not longitudinal motion
35 relative to the axles.

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Witnesses:

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