

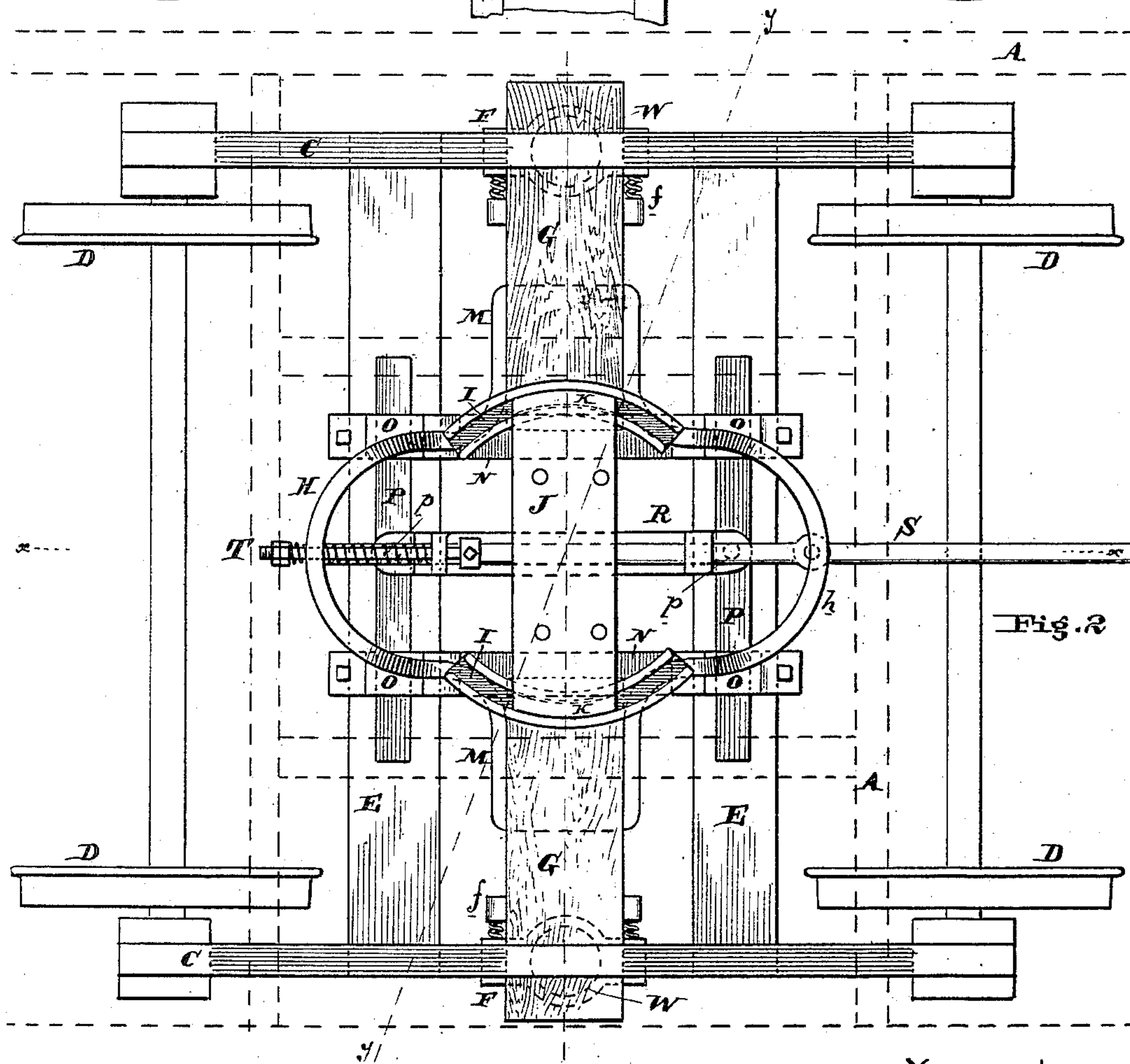
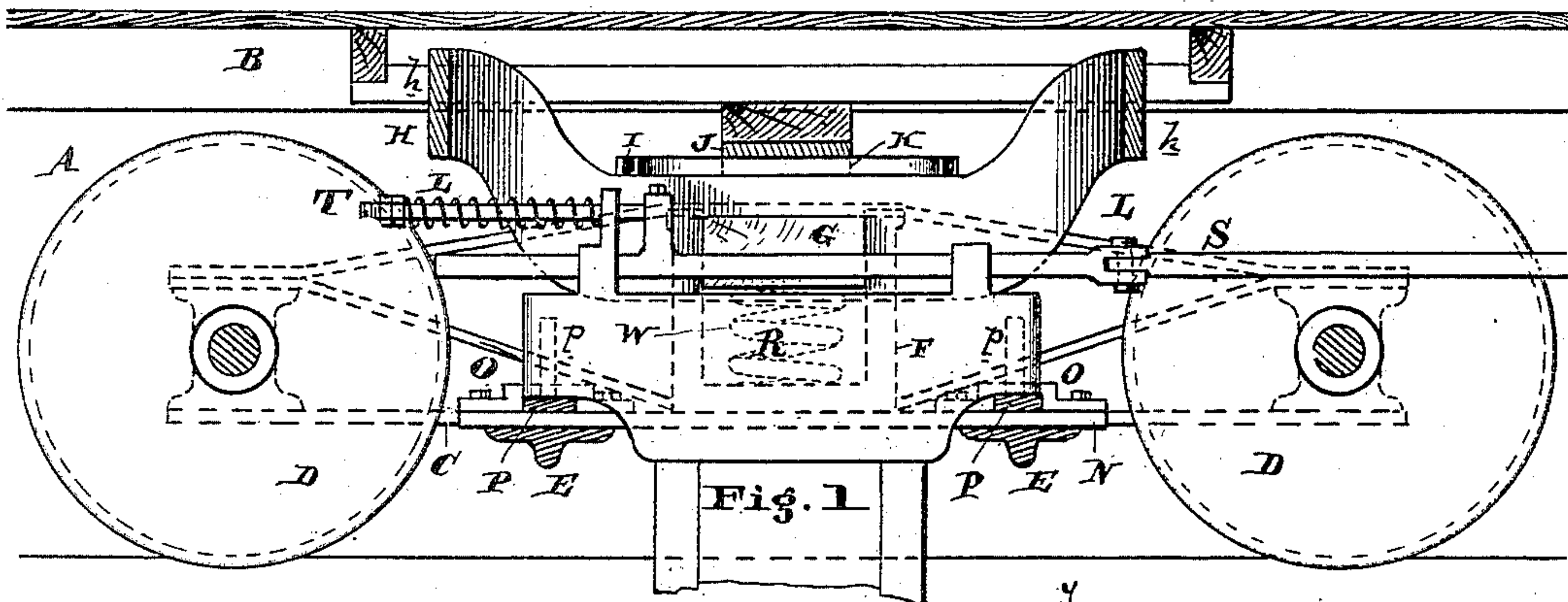
(No Model.)

G. M. BRILL & J. RAWLE.

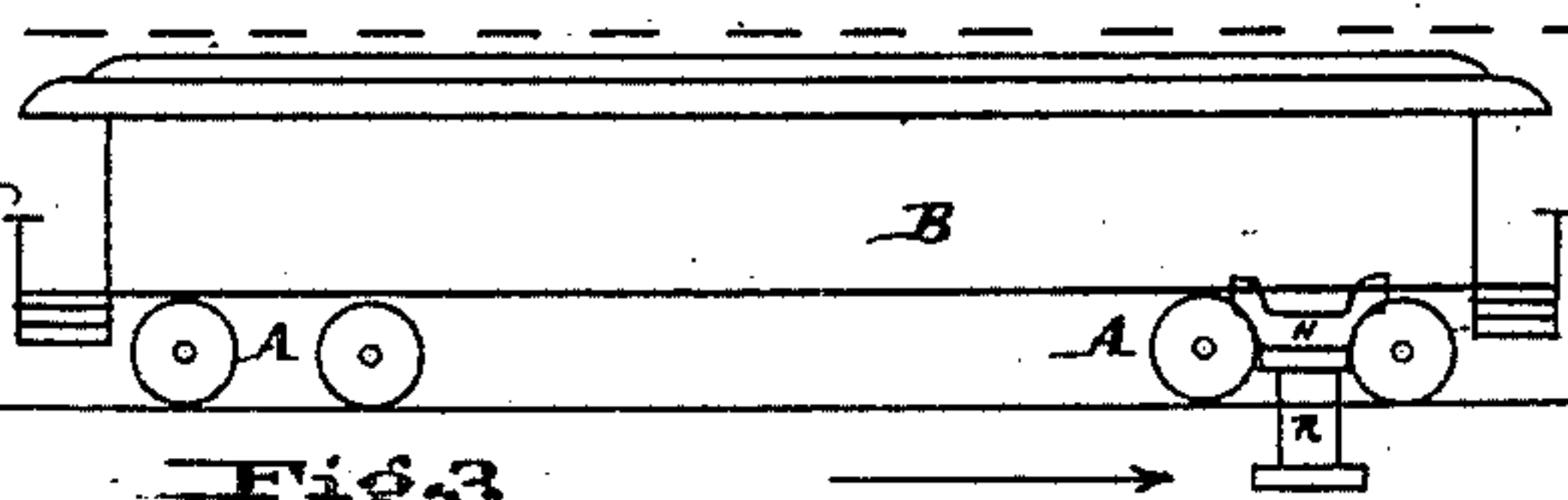
CAR TRUCK.

No. 339,040.

Patented Mar. 30, 1886.



Attest
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UNITED STATES PATENT OFFICE.

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CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 339,040, dated March 30, 1886.

Application filed November 23, 1885. Serial No. 183,700. (No model.)

To all whom it may concern:

Be it known that we, GEORGE M. BRILL and JAMES RAWLE, of the city and county of Philadelphia, and State of Pennsylvania, have
5 invented an Improvement in Car-Trucks for Cable Railways, of which the following is a specification.

Our invention has reference to car-trucks especially adapted to cable railways; and it consists in certain improvements fully set forth in
10 the following specification and shown in the accompanying drawings, which form part thereof.

In cable-railway cars it has been customary
15 to use simply a four-wheel truck rigidly connected to the car-body, and from the center of which the gripping apparatus depended, having suitable provision for lateral movement in going around curves, in which case
20 the grip proper would be thrown nearer to one side than to the other, or in the case of large cars—such as used upon the Brooklyn bridge—two ordinary pivoted railway-trucks are used, and the gripping device attached to
25 the body of the car midway between them. It has been found that rigid trucks are objectionable, owing to the fact that the axles must be close together to pass around short curves—such as found in street-railways—and with the
30 long cars now constructed for cable railways it is found that when fully loaded the car-body does not rest properly upon the truck, but in most cases tends to raise the forward wheels, endangering the car by derailment
35 and breakage of the grip; and in the case of the double-pivoted truck-cars, with the grip attached to the body, it would be impossible to use them for any purpose excepting such roads as those in which the cable was supported
40 above the ground and in which no sharp curves were encountered; but this form of construction is totally incapable of use on street cable railways as now constructed.

The object of our invention is to enable a
45 long car having two pivoted trucks to be used upon the cable-railway systems as at present adopted in street-railways, by providing a truck, preferably at the forward end of the car, whose center shall be provided with
50 a space sufficiently open to receive the cable-grip, which is suspended from the center thereof, or below the pivotal connection with

the car-body. To accomplish this result and yet employ grips proved by practice to be the best adapted to cable railways, it becomes
55 necessary to eliminate entirely the lower cross-timber supporting the car-springs, the links used to support the said timber and their appendages, and also to sever the bolster and provide suitable means to support the
60 ends thereof and receive the pivot-shoe attached to the body of the car, so as to enable the gripping devices to be suitably located and attached in the center of the truck or beneath
its pivotal point. By this means, no matter
65 what the length of the car may be, it can easily be propelled by a cable arranged in an underground conduit, as in this case the grip would have but very slight lateral motion in passing
around curves, which lateral motion would be
70 entirely independent of the length of the car.

In the drawings, Figure 1 is a sectional elevation on line *xx* of a car-truck for cable railways embodying our invention. Fig. 2 is
75 a plan view of same with the frame-work of the car-body indicated in dotted lines; and Fig. 3 is a side elevation of a car, showing the arrangement of the trucks thereunder.

A represents the truck, and B the car-body. The truck A is provided with the usual truss-
80 ing or brace-frame, C, provided with the journal-boxes in which the axles and wheels D are journaled. These trusses are also provided with guide-frames F, which are made U-shaped, and are adapted to receive the ends of the bolster G, and also support the bolster-springs W,
85 upon which the weight of the car is received, the bolster being free to move vertically and longitudinally in said guides. The longitudinal thrust due to the lateral swinging of the
90 car-body when passing around the curves is taken up by the springs *f*, arranged between the guides F and suitable thrust-blocks attached to the bolster ends, which springs are preferably arranged upon the inner side of the
95 trusses. These trusses are secured together by the cross-bars E, riveted to the lower tie-rods of the said trusses, thus uniting the parts into a compact truck. The bolster G has a central portion cut away and the two ends united
100 by the elliptical-shaped casting or forging H, provided with socket portions M, in which the wooden end sections of the bolster are secured. This casting H is provided with the segmental

guides I, preferably grooved, as shown, and into which the curved parts K of the pivot-shoe J project, which shoe is fastened to the car-body. By this means the truck may turn about the shoe J at an angle equal to that contained between the vertical line through Fig. 2 and the dotted line *yy*, which is sufficient for all curves. The forward and rear ends of the casting H may be raised, as at *h*, so as to clear the grip mechanism and allow of its lateral movement as well as the vertical movement of the bolster and its frame H. This allows of all the movement necessary for different loads which the car might be made to carry, as well as such movements as would be produced in running around curves, without danger of interfering with the grip.

R is the grip, and its upper portion is provided with holes in which the pins *p* pass to secure it to the lateral slide-bars P, guided in guides O, which are secured upon longitudinal bars N, fastened to cross-bars E, or said guides may be directly fastened to said cross-bars. Any other method of attaching the grip to the truck may be employed; but this method is that found most practical, as while it embodies rigidity it admits of all necessary adjustability.

The upper portion of the grip is provided with the operating-bar S and the return-bar T, around which the spring L is placed, and all of these parts project up into the casting H, which is properly proportioned to receive them. If desired, both trucks may be provided with gripping devices of this nature; but it is considered unnecessary, as that on the forward truck will suffice.

We do not limit ourselves to the exact shape of the casting or forging H, as it may be modified in various ways without departing from our invention.

Of course it is understood that the shape and construction of the grip shown may be modified or changed as desired, as this invention is adapted to any of the grips now in use.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of a car-body with a pivoted four-wheeled truck provided with a bolster having an opening within the pivot thereof, and a gripping device for a cable railway, located under the pivot-center and extending up within the opening in the bolster, substantially as and for the purpose specified.

2. A truck having a divided bolster, the two end sections thereof being united by an annular or ring shaped casting, which also acts as the pivot for the car-body, substantially as and for the purpose specified.

3. A truck having a divided bolster, the two end sections thereof being united by an annular or ring-shaped casting, which also acts as the pivot for the car-body, in combination with a gripping device for cable railways sup-

ported within said annular casting and between the two sections of the bolster, substantially as and for the purpose specified.

4. In a car-truck, the axles and side trusses or bracing provided with suitable vertical bolster-guides, in combination with the bolster adapted to support the car-body and move vertically and longitudinally in said guides, springs supported upon said side trusses and arranged under said bolster, and auxiliary springs arranged between the bolster and guides or trusses to receive the longitudinal thrust of the bolster due to the lateral swinging of the car-body in going around curves, whereby the desired results are attained, and the truck under the bolster is left clear and unobstructed, cross-bars connecting the lower parts of said side trusses, and gripping devices for cable railways supported upon said cross-bars and under the pivot of the truck, substantially as and for the purpose specified.

5. The combination, in a car-truck, of the bolster G, having its center cut away and its ends united by an annular casting or forging, H, provided with pivot-bearings I, with the pivot-shoe J, substantially as and for the purpose specified.

6. In a car-truck, the bolster G, having its center cut away and its ends united by an annular casting or forging, H, having its front and rear parts, *h*, raised, and provided with the pivot-bearings I, in combination with a gripping device for a cable railway supported by said truck and extended up within said annular casting, substantially as and for the purpose specified.

7. The combination of side trusses, C, axles and wheels D, with cross-bars E, connecting the said trusses, guides F in said trusses, springs W in said guides and under the bolster, divided bolster G, annular casting or forging H, uniting the bolster ends and having the bearings I, pivot-shoe J, carried by the car-body, slide-bars P, carried in guides upon bars N, and a gripping device for cable railways carried upon said slide-bars, substantially as and for the purpose specified.

8. A bolster for a car-truck, consisting of the two separated or end sections, G G, of wood, in combination with an annular casting or forging of metal provided with the pivot-bearings and uniting the end sections, substantially as and for the purpose specified.

9. The bolster for a car-truck, consisting of the end sections, G G, of wood, in combination with the annular casting or forging H, having the raised part *h*, and sectional pivot-bearings I, substantially as shown.

In testimony of which invention we hereunto set our hands.

GEORGE M. BRILL.
JAMES RAWLE.

Witnesses:

W. B. WEIR,
WM. H. HEULINGS, Jr.