No. 760,180. PATENTED MAY 17, 1904.

J. A. BRILL.

MAXIMUM TRACTION TRUCK.

APPLICATION FILED AUG. 29, 1903.

NO MODEL.

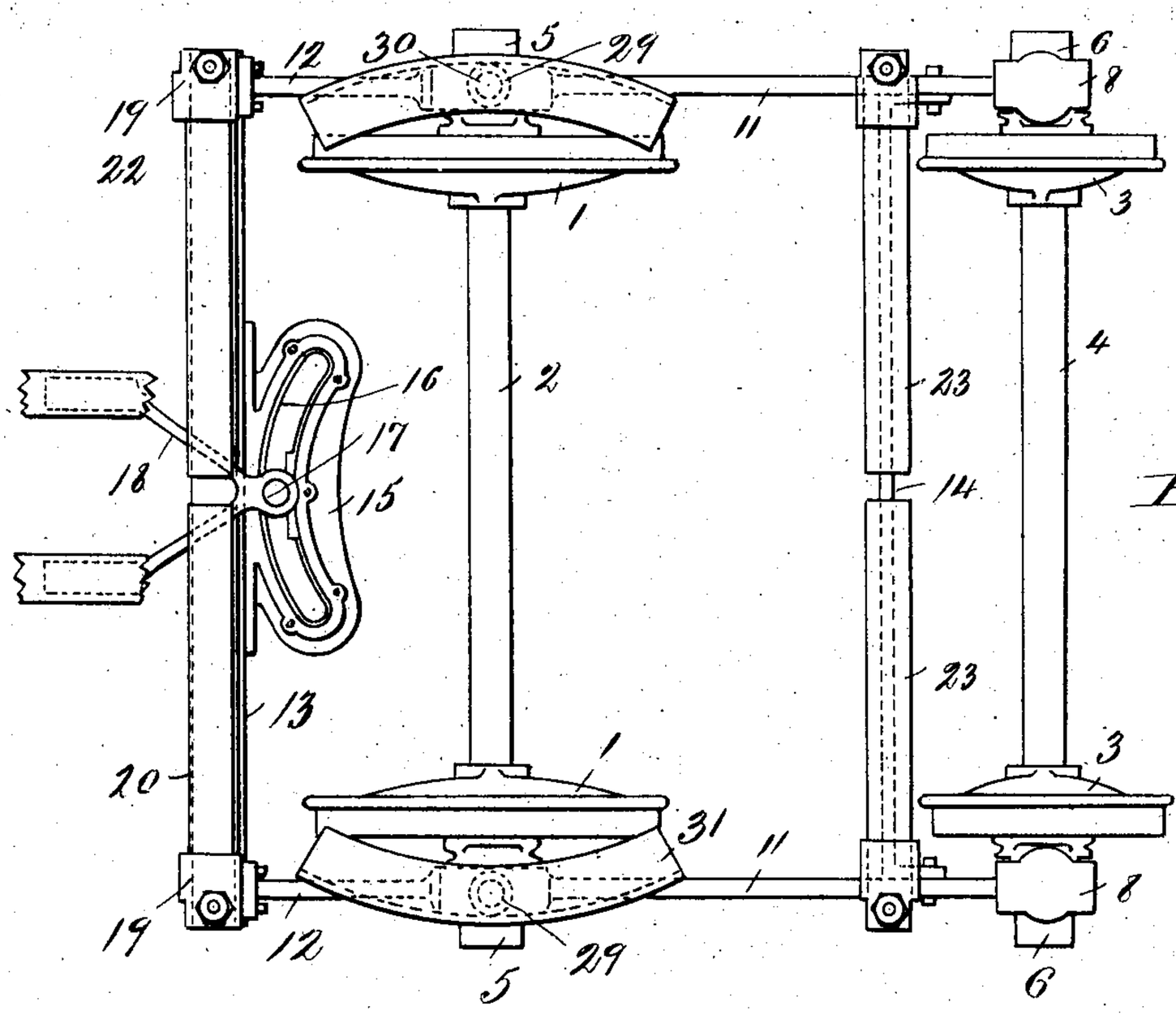

Fig. 1.

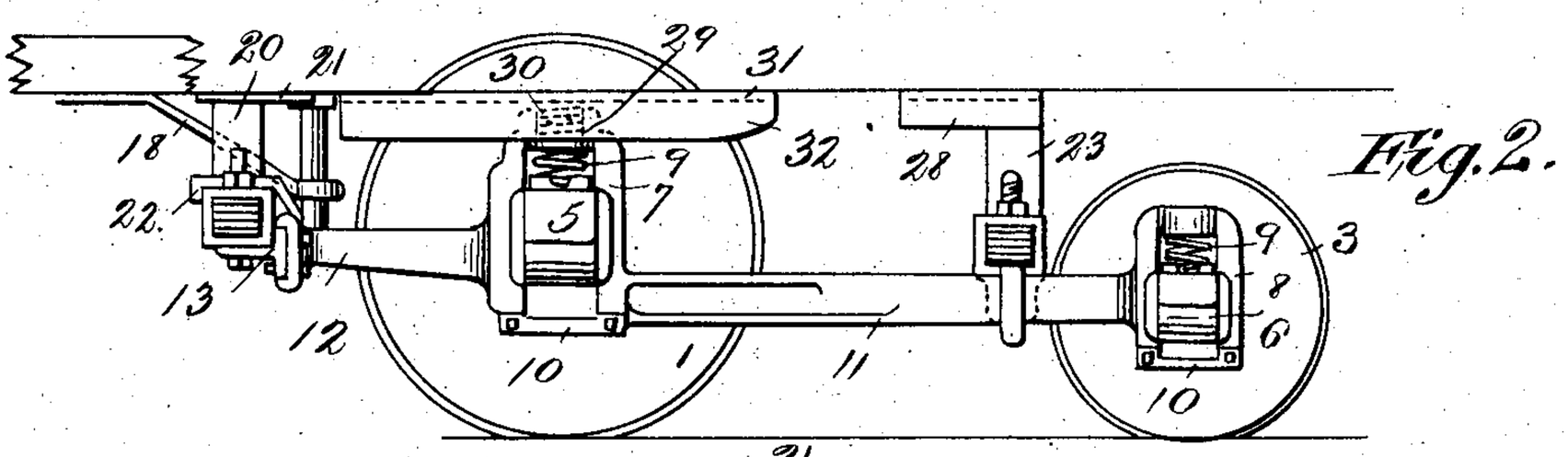

Fig. 2.

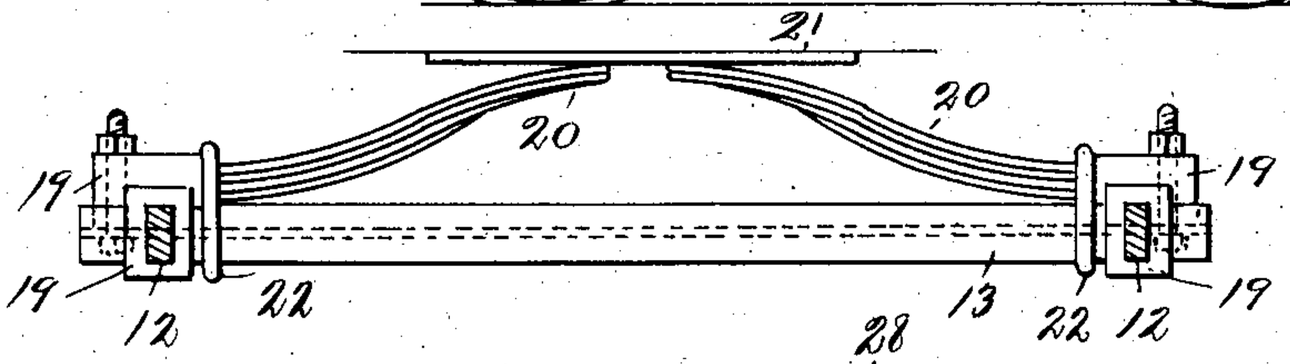

Fig. 3.

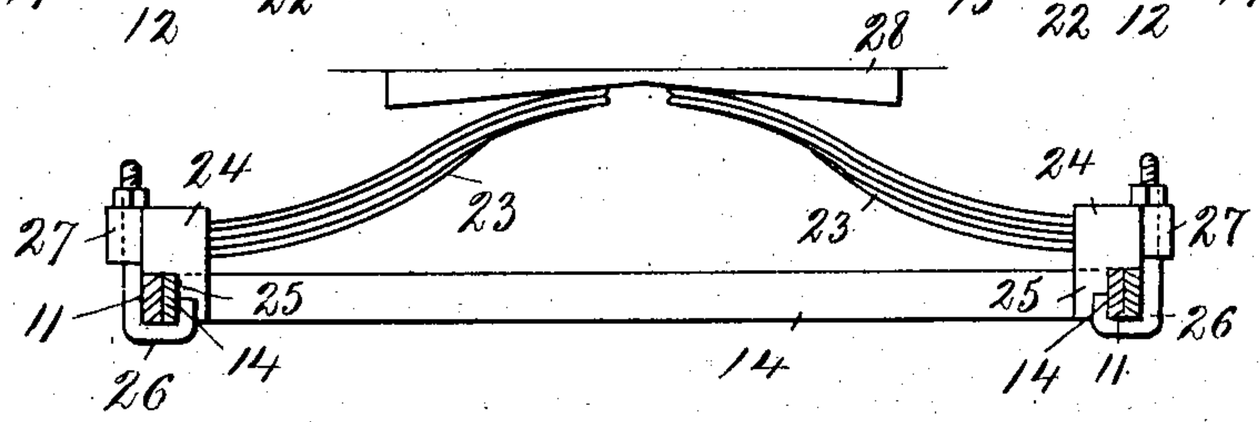

Fig. 4.

Witnesses
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No. 760,180. Patented May 17, 1904.

UNITED STATES PATENT OFFICE.

JOHN A. BRILL, OF PHILADELPHIA, PENNSYLVANIA.

MAXIMUM-TRACTION TRUCK.

SPECIFICATION forming part of Letters Patent No. 760,180, dated May 17, 1904.

Application filed August 29, 1903. Serial No. 171,228. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. BRILL, a citizen of the United States, and a resident of the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Maximum-Traction Trucks, of which the following is a specification.

The object of my invention is to provide a truck which will be simple in its construction and durable and economical in its operation, and this I accomplish by supplying the truck with quarter-elliptic springs which are so arranged and disposed that they support the car-body so as to make it easy riding, and they also reduce the wear of the trucks and roadbed.

For a more particular description of my invention reference is to be had to the accompanying drawings, forming a part thereof, in which—

Figure 1 is a plan view of a truck provided with my improvements. Fig. 2 is a side elevation of the same. Figs. 3 and 4 are detailed views showing the quarter-elliptic spring.

Throughout the various views similar reference characters designate similar parts.

The truck to which my invention may be applied comprises the usual driving-wheels 1, which are connected by an axle 2, and trailing wheels 3, which are fixed to the axle 4. The axles 2 and 4 support axle-boxes 5 and 6, which engage and support pedestals 7 and 8 through axle-box springs 9. The axle-boxes are retained in the pedestals by means of tie-rods 10, and the pedestals 7 and 8 are connected by chords 11. From the outer guides of the pedestals 7 extend arms 12, which are united by means of a crossing 13, and a second crossing 14 unites the chords 11 at points adjacent to the trailing wheels. As all these features are old and well known in the art, further description is deemed unnecessary.

The crossing 13 is provided with a slotted plate 15, which is fixed rigidly to said crossing and extends horizontally therefrom at a point adjacent to its center, and the slot 16 in this plate is concentric with the pivotal axis of the truck, so that a pin 17 engages the walls of the slot at its lower end, and its upper portion is fixed to the car-body and is braced by diverging braces 18, which are fixed to the sills of the car. The crossing 13 is preferably made out of a T-iron with a horizontal web, to which are bolted straps 19 of quarter-elliptic springs 20. These springs 20 are fixed to the ends of the crossings 13 and extend upwardly and inwardly to a rub-plate 21, which engages their free ends. These springs 20 are further secured in place by means of hooks 22, which extend over the said spring and under the crossing 13 at points adjacent to the straps or bands 19. By this means the ends of the springs 20 are firmly secured to the crossing 13. Quarter-elliptic springs 23, with straps or bands 24, are fixed to the chords 11 and crossings 14 by means of projecting flanges 25, which straddle the crossing 14. The band 24 is also held on the crossing 14 and chords 11 by means of hook-bolts 26, which extend through a perforated ear 27 on said strap 24, and these hook-bolts extend under portions of the crossings 14 and chords 11. The upper ends of the quarter-elliptic springs 23 engage a rub-plate 28, which is concave on its lower surface and fixed to the car-body, so that when the car-body is inclined when passing round a curve the pressure on the springs 23 is not diminished and the trailing wheels 3 are held to the track.

The pedestals 7 are provided on their upper surfaces with centrally-located housings 29, which inclose coil-springs 30, and the housings and springs are adapted to bear against curved rub-plates 31 with flanges 32. The rub-plates, with their flanges, are so curved and placed that they are concentric with the pivotal axis of the truck, and the flanges 32 rest against the housings 29 to assist in holding the truck in proper relation to the car-body.

The springs 30 are normally out of contact with the rub-plate 31, and when the car-body is inclined these springs come in contact with the rub-plate of the car-body to steady said car-body and prevent its oscillation.

From the above the operation of my improved truck is readily apparent. The weight

of the car-body is placed on the springs 20 and 23 through the rub-plates 21 and 28. As the springs slide freely on these rub-plates they are subjected only to vertical stresses, and all strains due to propulsion of the car are taken up by the pin 17, which has a free vertical movement in the slot 16. Should the car be canted over at any time because of the central location of the ends of the springs 20 and 23, the springs 30 will come into play and restore the car to its normal position and prevent all oscillation.

While I have shown and described one embodiment of my invention, it is obvious that many equivalent structures may be made which employ these characteristics and that my invention is not limited to this embodiment, but is covered by all structures that come within the scope of the following claims.

Having thus described my invention, what I claim is—

1. In a car-truck or similar device, the combination of the wheels, axles, axle-boxes, pedestals, chords, arms and crossings, with the quarter-elliptic springs secured to the ends of said crossings which are adapted to engage rub-plates which are fixed to the car-body.

2. In a truck or similar device, the combination of the wheels, axles, axle-boxes, pedestals, chords, arms, and crossings, with quarter-elliptic springs secured to said arms, chords and crossings, which are adapted to engage rub-plates on the car-body, and housings on said pedestals, which are provided with coil-springs which are adapted to engage flanged rub-plates of the car-body.

Signed in the city and county of Philadelphia, State of Pennsylvania, this 27th day of August, 1903.

JOHN A. BRILL.

Witnesses:
WM. J. FERDINAND,
TERRENCE MCCUSKER.