No. 760,380. PATENTED MAY 17, 1904.

J. A. BRILL.

MAXIMUM TRACTION CAR TRUCK.

APPLICATION FILED AUG. 29, 1903.

NO MODEL.

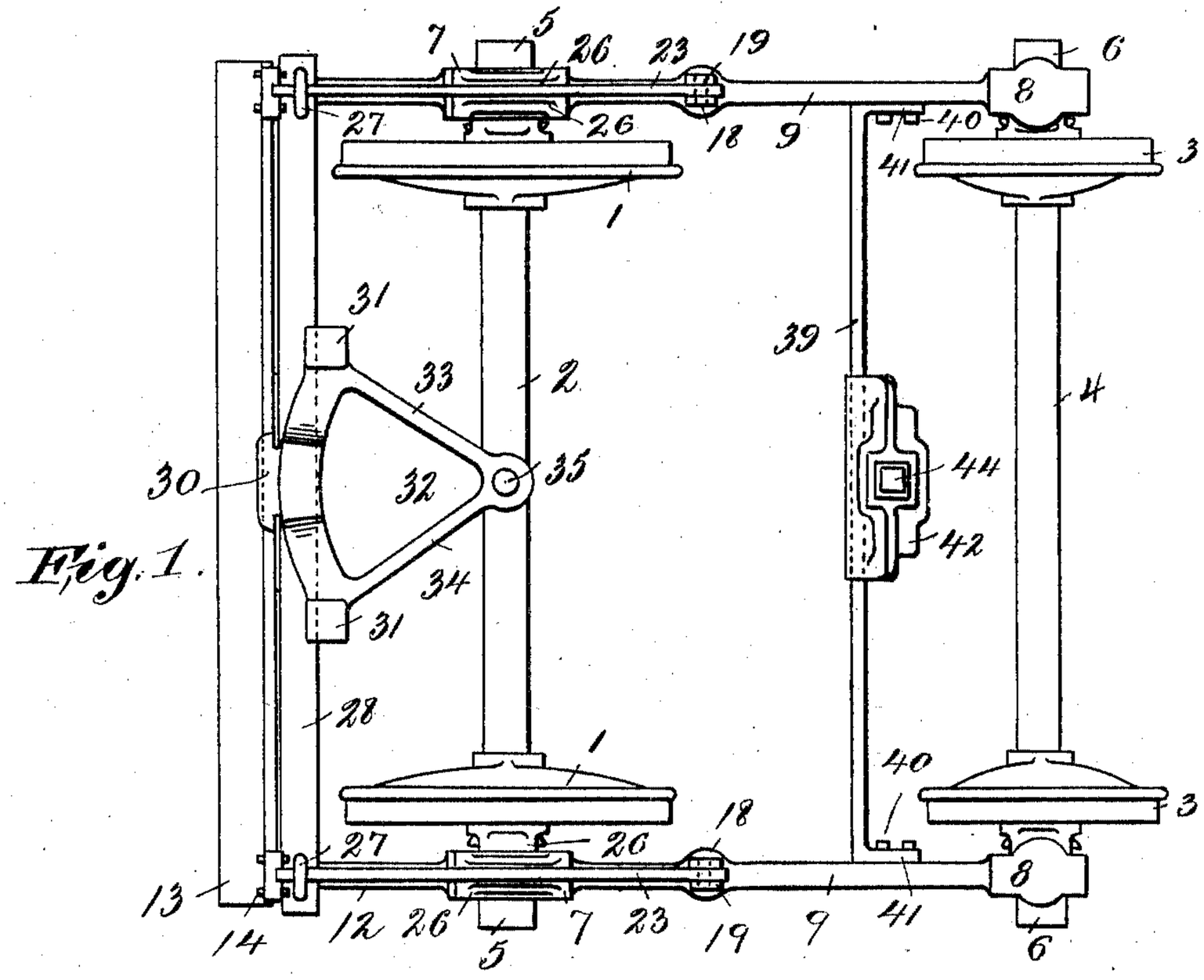

Fig. 1.

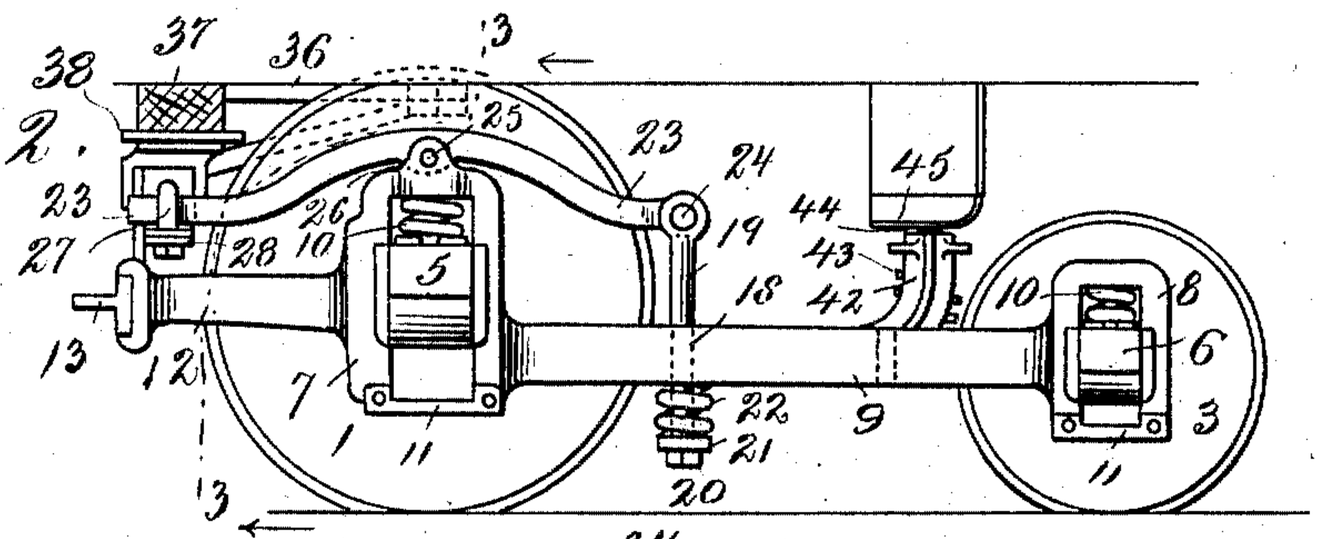

Fig. 2.

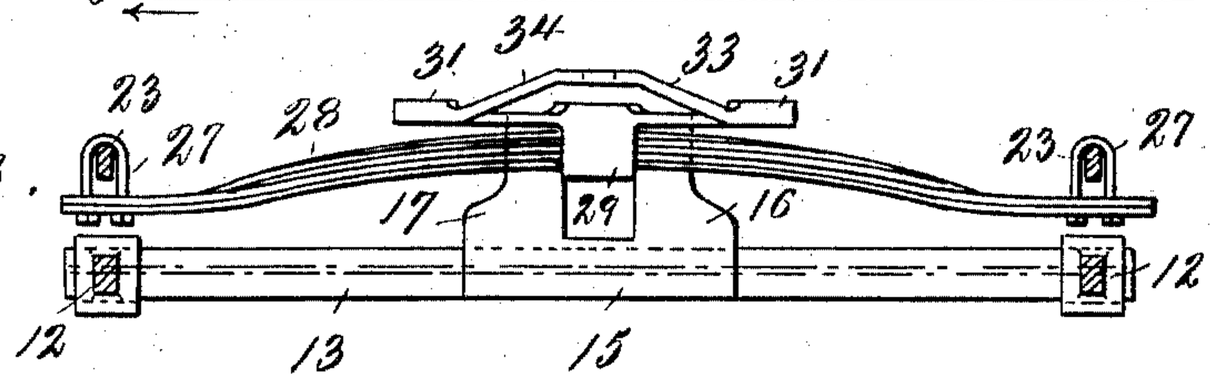

Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

JOHN A. BRILL, OF PHILADELPHIA, PENNSYLVANIA.

MAXIMUM-TRACTION CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 760,380, dated May 17, 1904.

Application filed August 29, 1903. Serial No. 171,227. (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 and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Maximum-Traction Car-Trucks, of which the following is a specification.

The object of my invention is to provide a truck of this type which will be simple and durable and which will at all times resiliently support the car-body and protect it from vibrations due to irregularities in the track or other causes. This object I accomplish by means of the structure hereinafter set forth.

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

Figure 1 is a plan view of my improved truck. Fig. 2 is a side elevation of the same, and Fig. 3 is a sectional view taken on the line 3 3 of Fig. 2 looking in the direction of the arrows.

Similar reference characters designate similar parts throughout the various views.

The driving-wheels 1 are connected by an axle 2, and the trailing wheels 3 by an axle 4. The axles 2 and 4 are connected in the usual way by axle-boxes 5 and 6, which slide in pedestals 7 and 8, which are connected by cords 9. Springs 10 support the pedestals on the axle-boxes, and these pedestals have tie-rods 11, connecting the lower ends of their arms. The pedestals 7 have outwardly-extending arms 12, which are united by the crossing 13, which may be of any suitable shape and secured in any desirable way, although I prefer to use a T-iron and bolt it to the arms by means of bolts 14. The pedestals 7 and 8, together with the chords 9 and the arms 12, constitute the side frames. Upright guides are fixed to the crossing 13, which are preferably formed integral from a plate 15, which is cut so as to form guides 16 and 17. It is evident that these guides may be made and secured in any suitable way. The chords 9 are enlarged and perforated at 18 to permit an eyebolt 19 to pass loosely through. These bolts 19 are provided at their lower ends with nuts 20, washers 21, and coiled springs 22, which are interposed between the washers 21 and the chords 9. The upper ends of the bolts 19 are bifurcated and pivotally engage levers 23 by means of pins 24. The levers 23 are upwardly arched and extend over the pedestals 7, to which they are fulcrumed by means of pins 25 and perforated ears 26, which extend upwardly from said pedestals. The free ends of the levers 23 are engaged by yokes 27, which are secured to and support an upwardly-arched semi-elliptic spring 28, which has a band 29 at its center. The band 29 is made to fit between the guides 16 and 17 and slide between them and is provided with an enlarged head 30, which prevents any movement transverse to the plane of the guides. Bearings 31 and a draw-bar 32 are also made integral with said band 29 or are made separate and fixed thereto in any desired way. The bar 32 comprises two converging arms 33 and 34, which unite about the king-bolt 35, which is secured to an arm 36, that extends laterally from the cross-sill 37 of the car-body. The lower surface of the sill 37 is provided with rub-plates 38, which engage the bearings 31 and support the car-body.

When the car is in use, the stresses on the draw-bar are borne by the guides 16 and 17 and the crossing 13, so that the spring 28 is relieved of all torsional stresses and the bearings move vertically, but have no other relative movement to the guides and crossing. As the weight of the car-body is borne by the spring 28, which is outside the wheel-base, it is obvious that a second bearing must be provided to keep the wheels 3 on the track. For this purpose and to better distribute the load on the truck I provide a secondary bearing which will now be described.

The chords 9 are connected by a transom 39 adjacent to the wheels 3, and this transom is secured by bolts 40 to the chords 9, which pass through its projecting ends 41. The center of this transom is provided with a casting 42, which forms a housing for a spring 43, which supports a plunger 44. The upper end of this plunger impinges against the lower surface of a rub-plate 45, dropped from a portion of the car-body, as may be convenient. By this means the weight of the car is dis-

tributed between the wheels, and the larger pair sustain the heavier load, as is usual in trucks of this type. Assuming the truck to be in the position shown in Fig. 2, when pressure is applied by the car-body to the rub-plate 31 the spring 28 is somewhat flattened, and the yokes 27 are splayed outwardly, as well as slide along the levers 23, because the spring 28 and band 29 have only a vertical movement. The downward movement of the yokes 27 causes a corresponding upward movement of the bolts 19 against the action of the coiled springs 22, so that the car-body is supported at all times by the combined and co-operating action of the springs 22, 28, and 43. This construction prevents or minimizes all jars to the car-body and injury to the track and running-gear.

While I have shown and described one embodiment of my invention, it is obvious that many others may be made which utilize one or more of its features and come within the scope of the annexed claims.

Having thus described my invention, what I claim is—

1. In a car-truck or similar device, the combination of the usual wheels, axles and side frames with levers which are each fulcrumed centrally and connected with a coiled spring at one end of each and the other ends connected by a spring.

2. In a car-truck, or similar device the combination of the usual wheels, axles and side frames with the levers fulcrumed intermediate of their ends, springs and means connected with the same to prevent the upward movement of one end of each lever, a spring connected to the other end of each lever, and means for causing said connecting-spring to move vertically.

3. In a car-truck or similar device, the combination of the usual wheels, axles and side frames with the levers fulcrumed to said frames, a pair of springs connected to said levers, a spring connecting said levers, means for causing said connecting-spring to have a vertical movement and a draw-bar connecting said spring and a king-bolt.

4. In a car-truck or similar device, the combination of the usual wheels, axles, pedestals, axle-boxes, axle-box springs, and chords, levers pivoted to ears extending from some of said axle-boxes, means for connecting said levers and springs and bolts connecting them with the chords.

5. In a car-truck or similar device, the combination of the usual wheels, axles, pedestals, axle-boxes, axle-box springs and chords, of levers pivoted to some of said axle-boxes and connected to said chords, an upwardly-arched semi-elliptic spring supported by said levers outside the wheel-base, bearings and a draw-bar connected with said spring, means for causing said spring to move vertically, and means for distributing the weight of the car-body on all wheels of the truck.

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.