No. 850,804. PATENTED APR. 16, 1907.

P. STEFFEE.

APPLIANCE FOR SHIFTING THE POINT OF APPLICATION OF THE WEIGHT ON THE TRUCKS OF CARS AND THE LIKE.

APPLICATION FILED SEPT. 11, 1906.

2 SHEETS—SHEET 1.

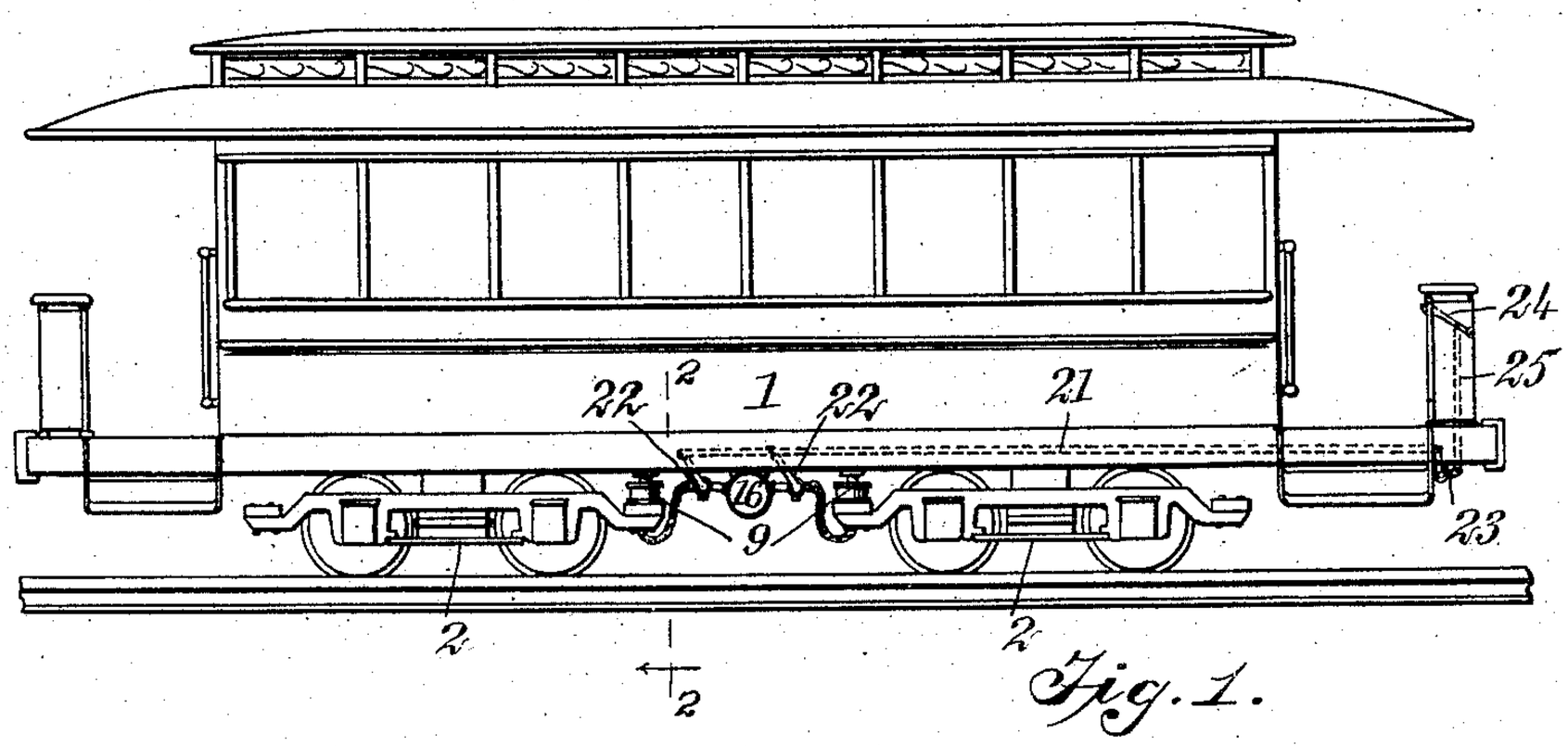

Fig. 1.

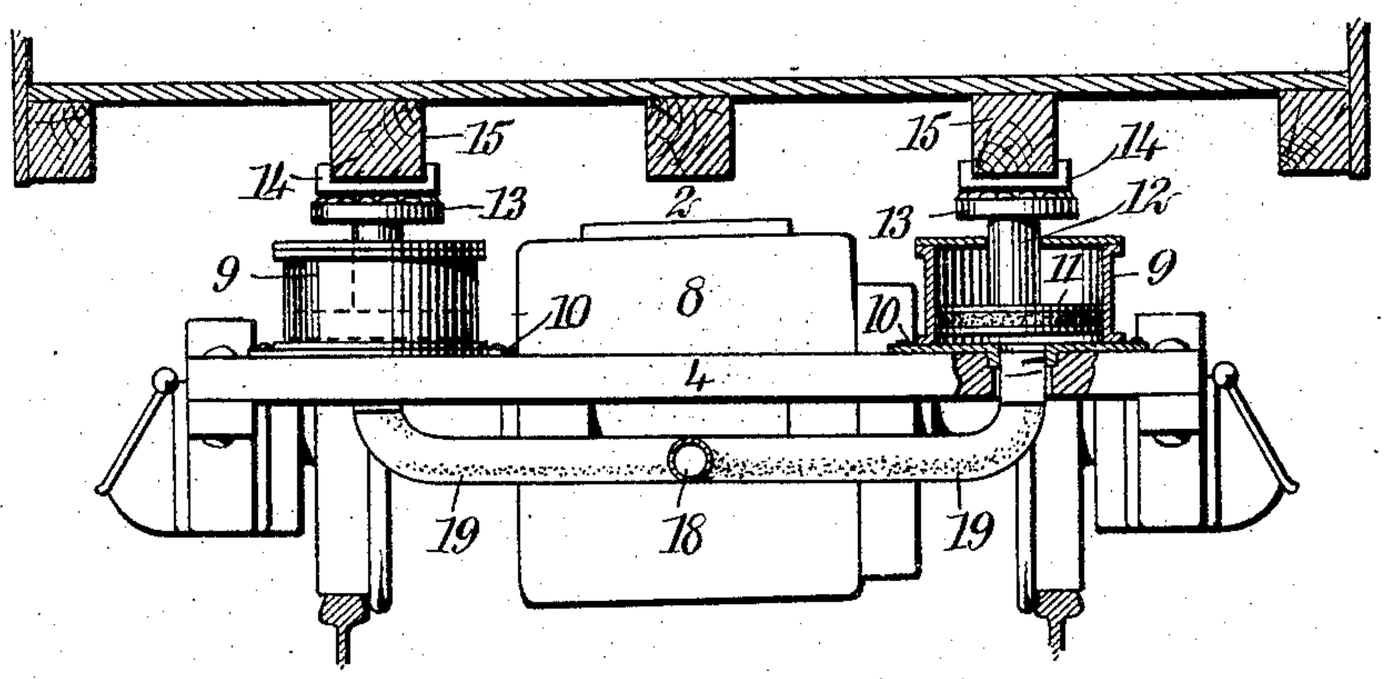

Fig. 2.

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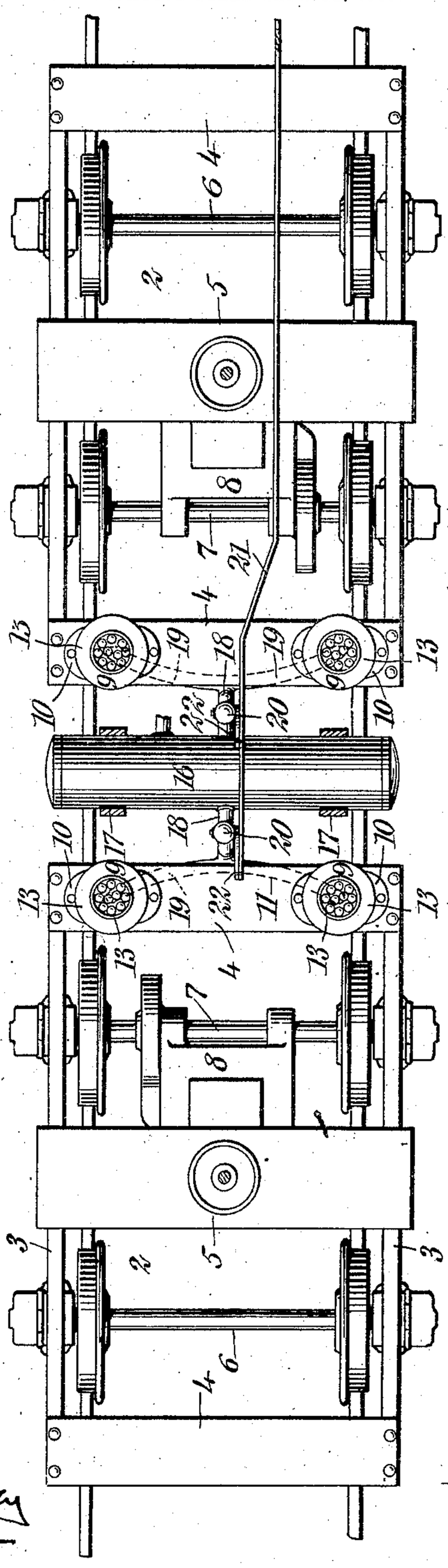
Fig. 3.



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PERRY STEFFEE, OF MISSOULA, MONTANA.

APPLIANCE FOR SHIFTING THE POINT OF APPLICATION OF THE WEIGHT ON THE TRUCKS OF CARS AND THE LIKE.

No. 850,804. Specification of Letters Patent. Patented April 16, 1907.

Application filed September 11, 1906. Serial No. 334,127.

To all whom it may concern:

Be it known that I, PERRY STEFFEE, a citizen of the United States, and a resident of Missoula, in the county of Missoula and State of Montana, have invented a new and Improved Appliance for Shifting the Point of Application of the Weight on the Trucks of Cars and the Like, of which the following is a full, clear, and exact description.

This invention is an improved appliance operable for shifting the point of application of the weight on the trucks of cars and the like for the purpose of bringing the entire weight of the car-body to bear on the driven wheels of the car-truck or those wheels to which the power is first applied in putting the car in motion. It is evident by such an arrangement of means the traction of the driven wheel will be increased, thereby avoiding slipping and enabling the car to be started without delay. Further, by using this appliance the weight of the car-body, if desired, may be materially decreased and the necessity of sanding the track will be seldom encountered.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a car with my improved appliance applied thereto. Fig. 2 is a partial transverse sectional view of the same substantially on the line 2 2 of Fig. 1 looking in the direction of the arrow, and Fig. 3 is a plan view of the car-trucks with my improved appliance intermediate thereof and in position.

Referring to the drawing-figures, the numeral 1 indicates a car-body, that shown being of the usual street-car type and is supported on trucks 2, consisting of side beams 3 and transverse end beams 4, the side beams being connected together at the center of the truck by the usual bolster 5, on which the weight of the car is ordinarily sustained. In journal-boxes carried by the side beams 3 are journaled an outer and an inner axle 6 and 7, respectively, in each truck, the inner axle 7 being driven by electric motors 8, as ordinarily found in common street-car construction, this part of the structure so far described forming no part of my invention, but being shown and described merely for the purpose of illustrating its application. Fixed to the upper face of the inner transverse beam of each truck near each end is a short cylinder 9, the cylinders being provided with base-plates 10 of such formation as to fit the beams 4, to which they are bolted or otherwise secured. Adapted to reciprocate in each of the cylinders 9 is a piston-head 11, rigidly carrying on its upper face a short stout rod 12, passing through the top cylinder-head and provided at its outer extremity with a cup 13, containing a plurality of hardened-steel bearing-balls. These balls carried by the cups are adapted to be projected against bearing-plates 14, fixed to the floor-sills 15 of the car, when the actuating motive agent is admitted behind the piston-heads 11.

For actuating the pistons the following mechanism is provided: An air-tank 16, positioned transversely of the car intermediate two trucks and held to the car-floor by straps or hangers 17, is supplied from a suitable source—as, for example, by the air-compressor employed for the brakes of the car. Connected to the tank at each side is a pipe 18, formed into branches 19, each leading through the base-plate 10 to the cylinder 9, the pipes 18 each having a three-way cock 20 at an intermediate point of its length. These cocks 20 are designed to form communication between the air-tank 16 and the several cylinders and also communication between the several cylinders and the outer atmosphere.

For operating the cocks any preferred means may be employed leading to a convenient point accessible to the motorman or other operator, that shown comprising a link 21 underneath the car pivotally connected to each of the arms 22, carrying the valves for the cocks. The link 21 is, as shown, of sufficient length to pass to one end of the car, where it is pivotally connected to a bell-crank lever 23, the latter being connected to an operating-lever 24, adjacent to the controller for the motors, through an intermediate link 25. It is evident by duplicating this mechanism at the opposite end of the car my improved appliance may be operated from either position.

The operation of the appliance is as follows: Assuming the car to be at rest and in readiness to start, the operator pulls the lever 24, turning the valves in the three-way cocks through the intermediate mechanism and forming a direct communication between the tank 16 and the bottom of the cylinders

9. As the compressed air rushes from the tank it raises the pistons in the cylinders and transfers or shifts the entire weight of the car-body from the bolsters 5 to the transverse beams 4, thus throwing practically the entire weight of the car-body on the driven axles 7. This, as is obvious, increases the traction of the wheels, preventing them from slipping and permitting the motors 8 to start the car without delay.

I have shown and described in detail one embodiment of my improved appliance in order that its construction and operation might be fully understood. It is, however, evident that the details of construction may be variously modified, and I consider that the scope of the invention is limited by the annexed claims only.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In an appliance of the character described, in combination, a car-body or the like, a truck for supporting the same comprising a central bolster and an end sill, a cylinder having a working piston therein mounted on the end sill, and means at one end of the car operable to admit an actuating agent to the cylinder.

2. In an appliance of the character described, in combination, a car-body or the like, trucks for supporting the same comprising central bolsters and end sills, air-operated means mounted on adjacent end sills, and means at one end of the car operable to simultaneously operate said means to shift the point of application of the weight of the body, on said adjacent end sills.

3. In an appliance of the character described, in combination, a car-body or the like, trucks for supporting the same comprising central bolsters and end sills, a plurality of cylinders fixed to each adjacent end sill, an air-tank intermediate said cylinders, and means for forming communication between the air-tank and cylinders whereby the weight of the car-body is shifted from the bolster to said adjacent end sill.

4. In an appliance of the character described, in combination, a car-body or the like, trucks for supporting the body comprising bolsters and end sills, a cylinder fixed to each adjacent end sill, a tank supported intermediate said cylinders, a piston movably mounted in each cylinder, and means for forming communication between the tank and cylinder whereby the pistons are actuated and the weight of the car-body is shifted from the bolsters to the end sills.

5. In an appliance of the character described, in combination, a car-body or the like, a truck for supporting the same comprising a bolster and an end sill, a cylinder fixed to the end sill and having a working piston therein, a ball-bearing carried at the upper end of the piston adapted to contact with the bottom of the car, and means for actuating the piston whereby the weight of the car-body is shifted from the bolster to the end sill.

6. In an appliance of the character described, in combination, a car-body or the like, a truck for supporting the same comprising a bolster and an end sill, a cylinder fixed to the end sill having a working piston therein, a tank, a pipe leading from the tank to the cylinder, a three-way cock in the pipe, and means operable at one end of the car for moving the cock to form communication between the tank and cylinder whereby as the piston is actuated the weight of the car-body is shifted from the bolster to the end sill.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PERRY STEFFEE.

Witnesses:
WILLIAM S. MURPHY,
P. J. KLINE.