

J. S. CARY.
BEAMLESS CAR BRAKE.
APPLICATION FILED APR. 27, 1903.

NO MODEL.

Fig. 1.

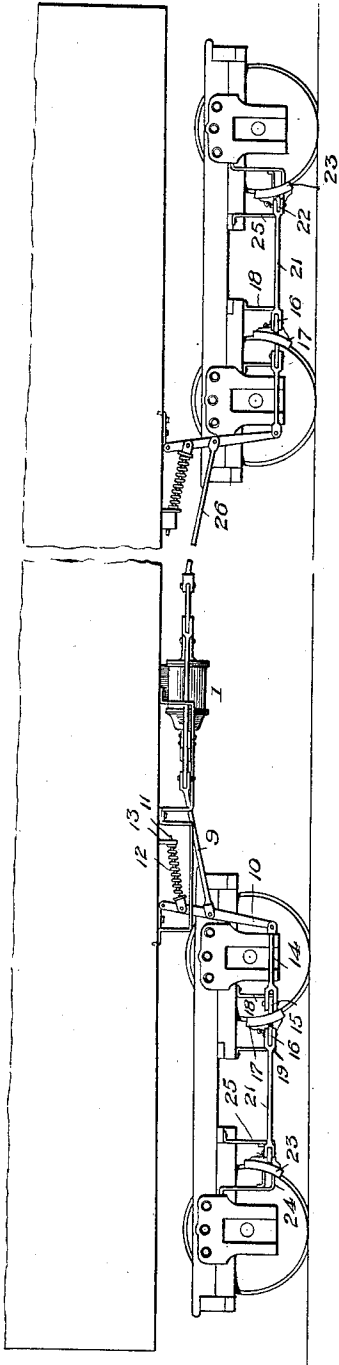
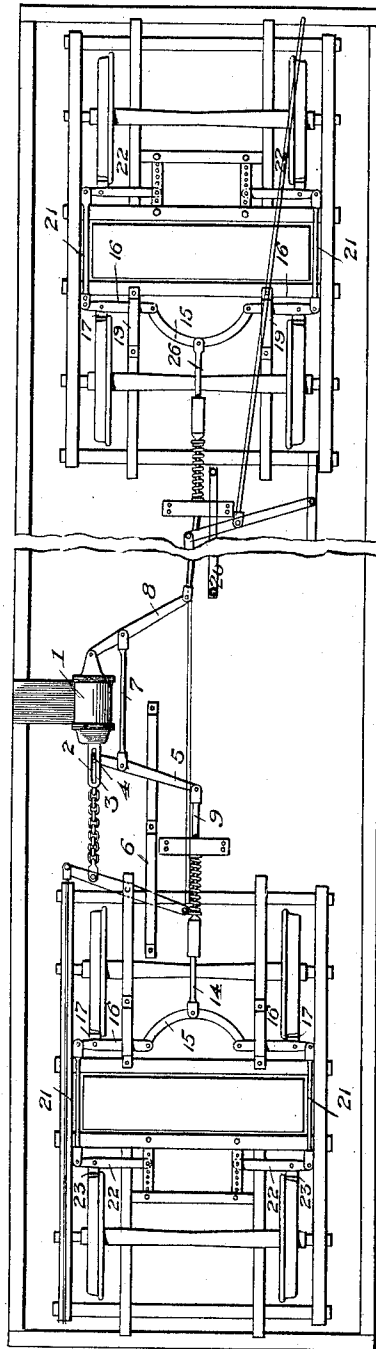


Fig. 2.



Witnesses

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BEAMLESS CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 736,686, dated August 18, 1903.

Application filed April 27, 1903. Serial No. 154,517. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. CARY, a citizen of the United States, residing at Denver, in the county of Denver, State of Colorado, have invented certain new and useful Improvements in Beamless Car-Brakes, of which the following is a description, reference being had to the accompanying drawings and to the figures of reference marked thereon.

My invention relates to car-brakes, particularly the class of car-brakes commonly known as "beamless"—that is, brakes in which the brake-beam commonly used in connection with each axle to carry the brake-shoes for the wheels of that axle is dispensed with.

The advantages of dispensing with the brake-beam are well understood and need not be here stated.

My invention has for its object to provide a simple and effective brake mechanism in which the brake-shoes are carried by levers supported from the car-truck without the necessity for brake-beams; and my invention consists in the construction and combination of elements hereinafter described, and particularly referred to and pointed out in the claims.

In the drawings, Figure 1 is a side view of a car having my brake mechanism applied thereto, and Fig. 2 is a bottom view of the same.

The invention is herein shown in connection with a car carried by two four-wheel trucks of usual construction, the details of the construction of the car-body and trucks not being shown in full, as they form no part of the invention.

In the construction shown, 1 represents an air-brake cylinder and piston of usual construction, secured to the car-body. The piston-rod 2 is preferably slotted, as shown at 3, and to it is connected, preferably by means of a pin 4, extending through this slot, a lever 5, which is suitably supported, preferably by a guide 6, secured to the car-body, and is connected intermediate its ends by a link 7 to a similar lever 8, having one end pivotally connected to the head of the air-brake cylinder.

To the free end of the lever 5, which is preferably horizontally arranged, is connected by a link 9 a vertically-arranged actuat-

ing-lever 10, pivotally connected at its upper end to the car-body, preferably at a point in line with the center line of the car. The link 9 is connected to the actuating-lever 10 at a point intermediate its ends, preferably a little above its middle point. A rod 11, carrying a spring 12, is connected to the actuating-lever 10 at one end and at its other end slides in an abutment 13, secured to the car-body. The spring bears at one end against a head formed on the rod and at the other end against the abutment.

To the free end of the actuating-lever is pivotally connected one end of a brake-rod 14, which at its other end is pivotally connected to an equalizer 15. The equalizer is preferably bowed or U-shaped, and the rod 14 is preferably connected to it at its middle point. At its ends the equalizer is pivotally connected to the inner ends of horizontal "live" brake-levers 16, which are located between the two axles of the truck, extend outward beyond the planes of the car-wheels, and have pivoted to them, arranged to bear against the wheels of the axle nearest the middle of the car, the brake-shoes 17. The levers 16 are supported by hangers 18, secured to the truck-frame and having horizontal portions 19, on which the levers 16 slide freely.

The outer ends of the levers 16 are connected by links 21 with the outer ends of horizontal "dead" levers 22, to which are pivoted brake-shoes 23, arranged to bear against the wheels of the axle farthest from the actuating mechanism. The levers 22 are similar to the levers 16, but have their inner ends pivoted to the horizontal portions 24 of the hangers 25, secured in any convenient manner to the truck-frame. The pivots of the levers 22 are preferably made adjustable on the horizontal portions 24, as shown.

The devices above described provide for applying brakes to the wheels of the truck at the left of Figs. 1 and 2. The devices for applying brakes to the wheels of the truck at the other end of the car are similar, with the exception that they are oppositely arranged and are operated through the lever 8 and link 26.

In operation as the piston-rod 2 is forced outward it effects an equal pull upon the links

9 and 26 and through them operates the actuating-levers 10 against the force of springs 12 to effect a pull upon the equalizers 15. This first brings the brake-shoes 17 against their wheels, the levers 16 having their fulcrums for the moment at their outer ends. As the brake-shoes 17 are forced against their wheels the levers, now having their fulcrums on the brake-shoes, force the outer ends of the levers 22 toward the wheels against which their brake-shoes 23 bear, and as the inner ends of these levers are pivoted to the hangers 25 the brake-shoes 23 will be forced against the wheels. The rotation of the car-wheels as the brake-shoes are forced against them tends to move the brake-shoes either up or down, depending on the direction in which the car is going and depending on whether the brake-shoe is applied to the front or rear of the wheel. As the live and dead levers are connected at their outer ends by a link, as described, the tendency of the brake-shoe carried by the live lever to move, whether up or down, is counteracted by the tendency of the brake-shoe carried by the dead lever to move in the opposite direction, with the result that comparatively little strain is brought on the hangers by which the live and dead levers are supported.

While I have shown an air-brake cylinder as the means for operating the actuating-lever of the brake mechanism, it should be understood that any other known actuating means—such, for instance, as the ordinary hand-wheel—may be used for operating the actuating-lever, as indicated in Fig. 2. It should also be understood that while I have shown the brake mechanism in connection with a four-wheel truck it may readily be applied to a truck having more than four wheels.

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

1. In a beamless car-brake, the combination of brake-shoes, horizontally-arranged live and dead levers each carrying a brake-shoe pivotally connected therewith intermediate its ends, means for supporting the live and dead levers from the car-truck, an equalizer pivotally connected at its ends to the inner ends of the live levers, links connecting the outer ends of the live levers with their corresponding dead levers, and means connected to the equalizer at its center for moving the equalizer to cause the brakes to be set; substantially as described.

2. In a beamless car-brake, the combination of brake-shoes, horizontally-arranged live and dead levers located below the plane of the car-axles, each carrying a brake-shoe pivotally connected therewith intermediate its ends, means for supporting the live and dead levers from the car-truck, an equalizer pivotally connected at its ends to the inner ends of the live levers, links connecting the

outer ends of the live levers with their corresponding dead levers, and means connected to the equalizer at its center for moving the equalizer to cause the brakes to be set; substantially as described.

3. In a beamless car-brake, the combination of brake-shoes, horizontally-arranged live and dead levers, each carrying a brake-shoe pivotally connected therewith intermediate its ends, means for supporting the live and dead levers from the car-truck, a U-shaped equalizer pivotally connected at its ends to the inner end of the live levers, the links connecting the outer ends of the live levers with their corresponding dead levers, and means connected to the equalizer at its center for moving the equalizer to cause the brakes to be set; substantially as described.

4. In a beamless car-brake, the combination of brake-shoes, horizontally-arranged live and dead levers each carrying a brake-shoe pivotally connected therewith intermediate its ends, means for supporting the live and dead levers from the car-truck, an equalizer pivotally connected at its ends to the inner ends of the live levers, links connecting the outer ends of the live levers with their corresponding dead levers, means connected to the equalizer at its center for moving the equalizer in one direction to cause the brakes to be set and for moving it in the opposite direction to release the brakes; substantially as described.

5. In a beamless car-brake, the combination of brake-shoes, horizontally-arranged live and dead levers, each carrying a brake-shoe pivotally connected therewith intermediate its ends, means for supporting the live and dead levers from the car-truck, an equalizer pivotally connected at its ends to the inner ends of the live levers, links connecting the outer ends of the live levers with their corresponding dead levers, a brake-rod pivotally connected at one end to the center of the equalizer, an actuating-lever to the lower end of which the other end of the brake-rod is pivotally connected, pivotally connected at its upper end to the car-body, and means connected with the actuating-lever intermediate its ends for moving it to cause the brakes to be set; substantially as described.

6. In a beamless car-brake, the combination of brake-shoes, horizontally-arranged live and dead levers, each carrying a brake-shoe pivotally connected therewith, intermediate its ends, means for supporting the live and dead levers from the car-truck, an equalizer pivotally connected at its ends to the inner ends of the live levers, links connecting the outer ends of the live levers with their corresponding dead levers, a brake-rod pivotally connected at one end to the center of the equalizer, an actuating-lever to the lower end of which the other end of the brake-rod

is pivotally connected, pivotally connected at
its upper end to the car-body, means con-
nected with the actuating-lever intermediate
its ends for moving it to cause the brakes to
5 be set, and a spring arranged to act on the
actuating-lever to aid in releasing the brakes;
substantially as described.

In testimony whereof I affix my signature
in presence of two witnesses.

JOHN S. CARY.

Witnesses:

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J. L. TAYLOR.