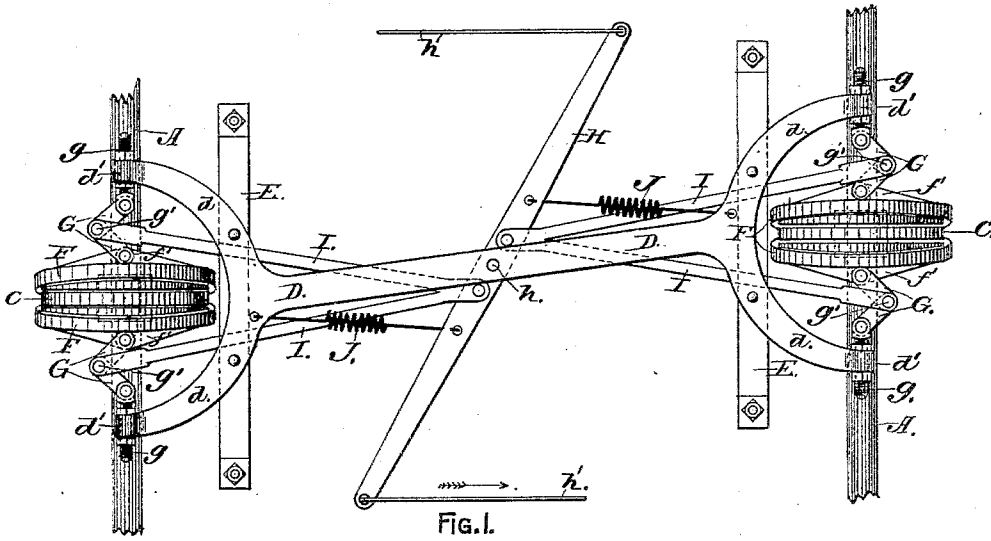
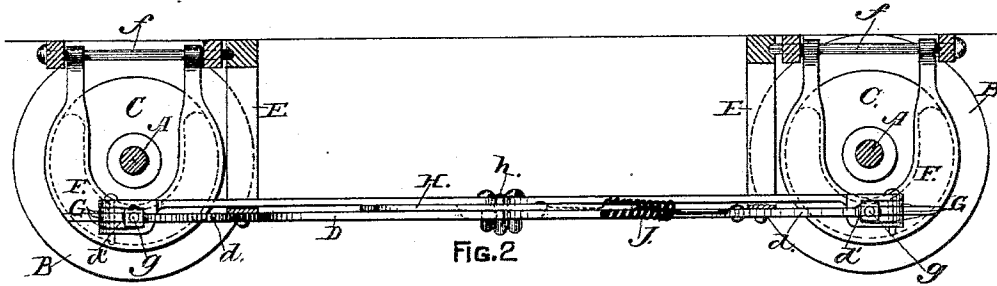
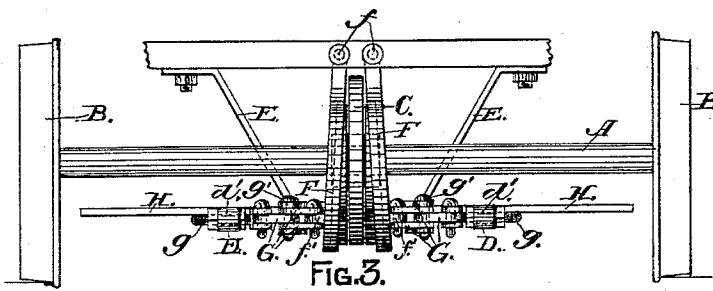


(No Model.)

L. MESSIER.
CAR BRAKE.

No. 369,461.

Patented Sept. 6, 1887.



WITNESSES:

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UNITED STATES PATENT OFFICE.

LUKE MESSIER, OF ALBANY, NEW YORK.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 369,461, dated September 6, 1887.

Application filed May 25, 1887. Serial No. 239,342. (No model.)

To all whom it may concern:

Be it known that I, LUKE MESSIER, of the city and county of Albany, and State of New York, have invented new and useful Improvements in Car-Brakes, of which the following is a specification.

My invention relates to improvements in car-brakes, but especially to that class of brakes that is used on the cars of street-railways; and the object of this invention is to provide an efficient, enduring, and reliable brake mechanism for the above-named purpose. This object I attain by the mechanism illustrated in the accompanying drawings, which are herein referred to and form part of this specification, and in which—

Figure 1 is an inverted plan view of my car-brake; Fig. 2, a side elevation of the same, with the car-axes shown in section; and Fig. 3, an end elevation of the same.

As represented in the drawings, A indicates the car-axes, and B the car-wheels secured on said axles.

C indicates friction-disks secured to the axles A at or near the middle of said axles. Each of said disks has a uniform thickness, so that its opposite faces will be parallel to each other, and the diameter of said disks should be sufficiently less than the diameter of the car-wheels to prevent said disks from becoming wet and muddy by use in inclement weather.

D is a yoke or beam suspended from the bottom of the car by the hangers E, and bifurcated at each end to form arms *d*, whose ends reach points that correspond to the center lines of the axles A. The end of each arm *d* terminates in a transverse sleeve, *d'*, so arranged that the two opposite sleeves on the same end of the yoke D will range in line with each other, for a purpose hereinafter explained.

F indicates the brake-shoes, which are arranged in pairs, one at each flat side of each friction-disk C, and which are preferably filled with wooden linings that are fitted to bear "end grain" against the flat surfaces of said disks. Said brake-shoes are hinged, as at *f*, to the under side of the car-floor, so that when the brakes are off the bearing-surfaces of said shoes will hang just clear of, but in close proximity to, the flat surfaces of said disks.

G indicates toggle-joints interposed between

the arms *d* and brake-shoes F, for the purpose of imparting the required movements to the latter. Each of said toggle-joints has one end pivoted to a lug, *f'*, on the brake-shoe to which said joint may be appropriated, and the opposite end of said joint is pivoted to an adjustable bolt, *g*, which passes through the sleeve *d'* of the arm *d* nearest said toggle-joint.

H is a brake-lever, pivoted at or near its middle, as at *h*, to the yoke D, and having its opposite ends connected by rods or chains *h'* to the usual brake-operating mechanism at the opposite ends of the car. The said lever is connected at each side of its pivotal center by means of bifurcated rods I to the toggle-joints G, the outer ends of said rods being connected to the central joint-pins, *g'*, of said toggle-joints.

J indicates springs attached to the lever H, for the purpose of moving the latter to retract the brake-shoes F from contact with the friction-disks C.

The operation of my brake apparatus is as follows: The parts being in their normal positions, as shown in Fig. 1, where the brake-shoes F will be clear from contact with the friction-disks C, then on applying the necessary force to move the brake-lever H in the direction indicated by the arrow on Fig. 1 the rods I will draw the parts of the toggle-joints G inwardly, so that said parts will approach a straight line; but as the outer ends of said toggle-joints are pivoted to fixed points, it is evident that the inner ends of said joints must of necessity move toward each other, and thereby force the brake-shoes F into frictional contact with the friction-disks C, so as to stop the rotations of the axles A. On relieving the brake lever H from the strain by which it has been moved the springs J will carry said lever and all its connected parts back to their normal positions and restore the apparatus to the condition it was in at the beginning of the operations above described.

By means of the adjustable bolts *g* provision is made for adjusting the brake-shoes F so as to compensate for any wearing away of the faces of said shoes.

I claim as my invention—

1. In a car-brake, the combination, with the axles A, having friction-disks C secured there-

on, a stationary yoke, D, which is bifurcated at each end to form the arms *d*, each having one end of a toggle-joint pivoted thereto, and the brake-shoes F, arranged at opposite sides of the flat faces of the friction-disks C, said brake-shoes being hinged to the under side of the car and connected by the toggle-joints G to the arms *d*, of the brake-lever H and connecting-rods I, the latter forming connections between said brake-lever and the toggle-joints G, as herein specified.

2. In a car-brake, the combination, with the axles A, each having a friction-disk, C, secured thereon, a stationary yoke, D, bifurcated at each end to form the arms *d*, each of the latter

being provided with an adjustable bolt, *g*, that forms a pivotal point for a toggle-joint, G, that is connected thereto, and the brake-shoes F, arranged at opposite sides of the flat faces of the friction-disks C, the said brake-shoes being hinged to the under side of the car and connected by the toggle-joints G to the adjustable bolts *g*, of the brake-lever H and connecting-rods I, the said lever being connected by said rods to the toggle-joints G, as and for the purpose herein specified.

LUKE MESSIER.

Witnesses:

WM. H. LOW,
S. B. BREWER.