No. 647,340. Patented Apr. 10, 1900.

L. C. TROMBLEY.

EQUALIZING CAR BRAKE.

(Application filed June 9, 1899.)

(No Model.) 2 Sheets—Sheet 1.

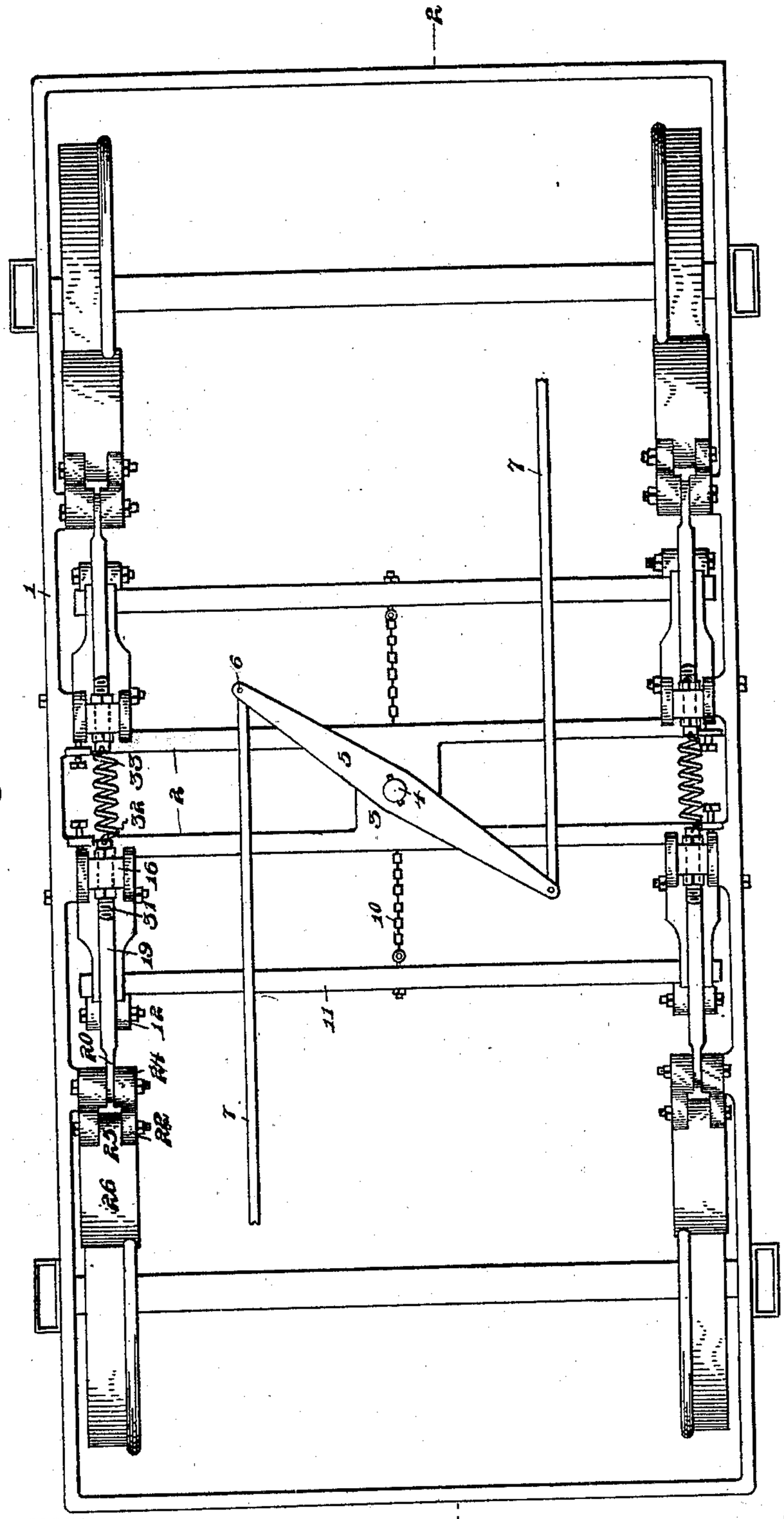

Fig. 1.

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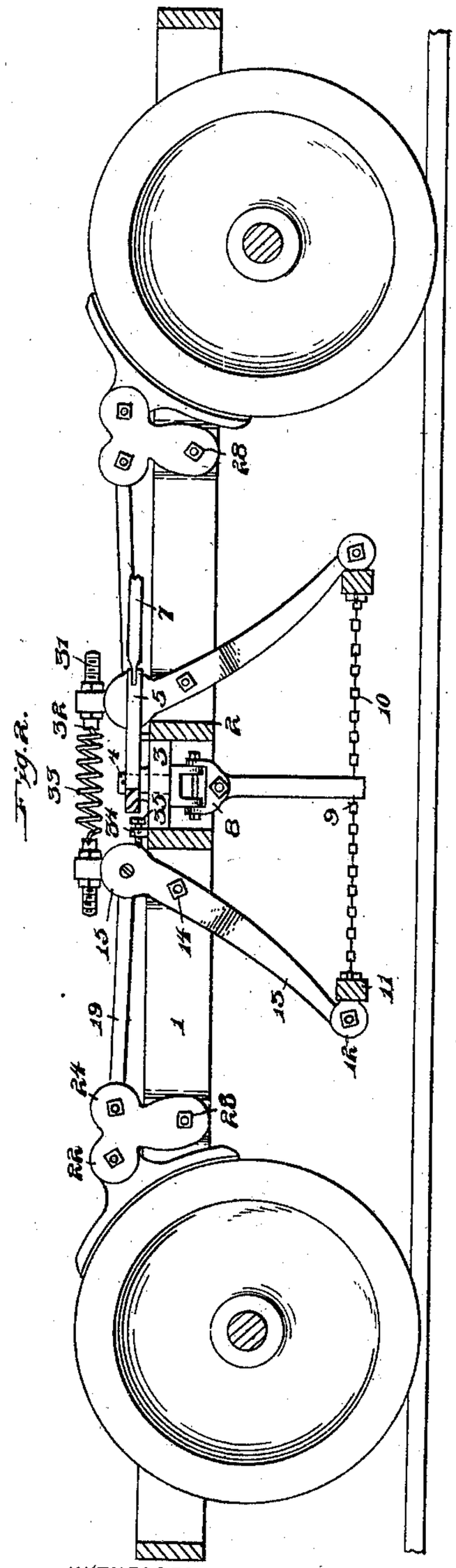

Fig. A.

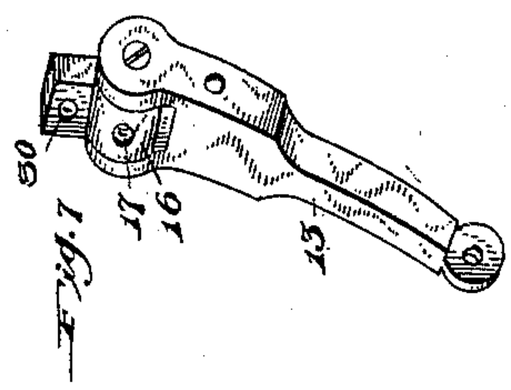

Fig. 1.

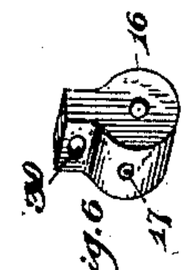

Fig. 6.

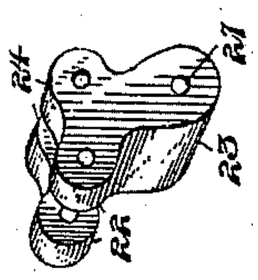

Fig. 8.

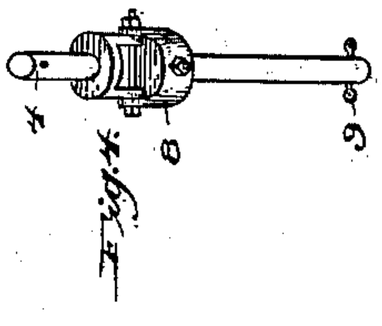

Fig. 4.

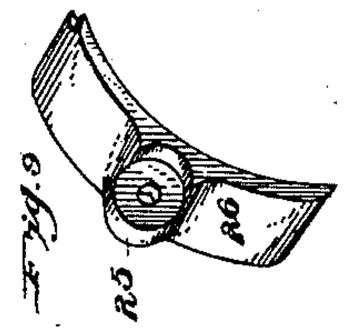

Fig. 9.

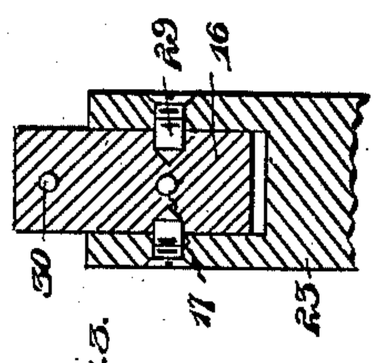

Fig. 5.

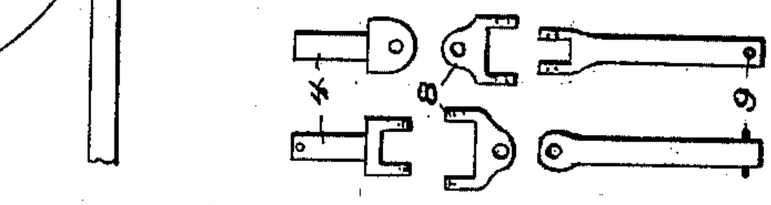

Fig. 5.

Fig. 10.

Fig. 11.

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UNITED STATES PATENT OFFICE.

LEWIS C. TROMBLEY, OF ALLEGHENY, PENNSYLVANIA.

EQUALIZING CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 647,340, dated April 10, 1900.

Application filed June 9, 1899. Serial No. 719,956. (No model.)

To all whom it may concern:

Be it known that I, LEWIS C. TROMBLEY, a citizen of the United States of America, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Equalizing Car-Brakes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in brakes, and more particularly to that class employed for tramways and the like.

One object of the herein-described invention is to construct a brake that will equalize the power upon the brake-shoes and peripheries of the wheels.

Another object of the invention is to obviate sudden jar that is usually caused when a quick or emergency stop is made.

The invention has for its still further object to provide new and novel means that in case one or more brake-shoes are of uneven thickness by reason of wear or the character of the material employed the mechanism will adjust itself to compensate for such unevenness and obtain an equal distribution of the power upon the periphery of the wheels.

The invention has for its still further object to construct a brake of the above-referred-to class that will be extremely simple in its construction, strong, durable, and efficient in its operation; furthermore, one that will be easily applied to the standard trucks that are now in use.

With the above and other objects in view the invention finally consists in the novel construction, combination, and arrangement of parts to be hereinafter more fully described, and specifically pointed out in the claims.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, wherein like numerals of reference indicate corresponding parts throughout the several views thereof, and in which—

Figure 1 is a top plan view of a car-truck with my improved brake mechanism applied thereto. Fig. 2 is a longitudinal sectional view taken on the line 2 2 of Fig. 1. Fig. 3 is an enlarged vertical sectional view, broken away at its lower end, of the upper portion of Fig. 7. Fig. 4 is a perspective view of the operating-rod carrying a knuckle-joint. Fig. 5 is a side elevation of the same, showing the parts disconnected. Fig. 6 is a perspective view of one of the bearings of the brake-beam hangers. Fig. 7 is a perspective view of one of the brake-beam hangers and bearing connected thereto. Fig. 8 is a perspective view of the brake-shoe hangers. Fig. 9 is a perspective view of the brake-shoe. Fig. 10 is a perspective view of the connecting-rod secured to the brake-beam hanger and brake-shoe hanger. Fig. 11 is a perspective view of the screw-threaded bolt for the bearing of the brake-beam hangers.

Referring to the drawings by reference-numerals, 1 indicates a truck of a car, and 2 indicates the cross-beams of the same, said cross-beams being suitably connected in the center of the car by a plate 3, said plate being centrally apertured and adapted to receive an operating-rod 4, said operating-rod carrying upon its upper end a swiveled lever 5, the ends of said lever being pivotally connected at 6 to ordinary rods 7. These brake-rods, which are operated in the well-known manner, are not shown in the drawings. The said operating-rod is provided with a knuckle-joint 8, the lower end 9 of said operating-rod having secured thereto chains 10, connected to the brake-beams 11. The ends of said brake-beams are provided with apertured lugs 12, which are adapted to receive and have pivotally connected thereto the brake-beam hangers 13, said brake-beam hangers being fulcrumed at 14 to the sides of the truck. The upper ends of said hangers are bifurcated, as at 15, for the reception of the bearings 16, which are pivotally connected thereto, each of said bearings having formed therein a screw-threaded aperture 17, which is adapted to receive the screw-threaded end 18 of the connecting-rod 19, the other end of said connecting-rod terminating in a head 20, having formed therein an aperture 21, said head 20 being pivotally connected to the bifurcated ends 24 of the brake-shoe hanger 23. The opposite end of the said brake-shoe hanger 23 is likewise bi-

furcated, as shown at 22, and is adapted to receive the apertured lug 25 of the brake-shoe 26. The lower end of the brake-shoe hanger is likewise apertured, as at 27, for the reception of the bolt 28, connecting the same to one side of the truck. The connections between the bifurcated ends of the brake-beam hangers and the bearings 16 are preferably constructed, as shown in Fig. 3 of the drawings, with cone-bearings 29.

The upper end of the bearing 16 is apertured, as at 30, and is adapted to receive a screw-threaded bolt 31, carrying an apertured head 32 to receive the retractile spring 33.

Apertured lugs 34 are arranged upon the upper face of the cross-beams, in which are secured adjusting-screws 35.

The operation of my improved brake mechanism is as follows: The brake-rod being operated from either side of the car, as the case may be, will operate the swiveled lever, thereby partially rotating the operating-rod and causing the brake-beams to be drawn together by means of the chains, thereby causing the upper end of the brake-beam hangers to move outwardly, carrying the connecting-rods, and imparting a similar motion to the brake-shoe hangers and applying the brake-shoes firmly to the periphery of the wheels. When the brake is released, the spring will contract and release the brake-shoes from engagement with the periphery of the wheels, returning the mechanism to its normal position.

It will be noted that in case one of the brake-shoes is of less thickness than the other the mechanism will automatically adjust itself and compensate for such unevenness. The lower end 9 of the operating-rod will then be slightly out of alinement, such operation being permitted by reason of the knuckle-joint.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. In a car-brake, the combination of brake-beam hangers, connecting-rods attached to said brake-beam hangers, brake-shoe hangers attached to said connecting-rods and the side of the truck, brake-shoes attached to said hangers, an operating-rod, a knuckle-joint arranged in said operating-rod, chains attached to the lower end of said operating-rod and connecting said brake-beams, and suitable mechanism whereby movement is communicated to said operating-rod, substantially as described.

2. In a car-brake, the combination of brake-beam hangers, connecting-rods connected to said hangers, brake-shoe hangers connected to said connecting-rods, brake-shoes carried by said hangers, an operating-rod, a knuckle-joint arranged in said operating-rod, chains connecting said operating-rod to the brake-beams, bearings arranged in the upper end of said brake-beam hangers, and spring connections between said bearings, all parts being arranged substantially as herein shown and described.

3. In a car-brake, the combination of brake-beam hangers, brake-beams secured to the lower ends of said hangers, chains connecting said brake-beams, an operating-rod connecting said chains, a knuckle-joint arranged in said operating-rod, a swivel-lever connected to the upper end of said operating-rod, and means whereby said lever is operated, substantially as described, and for the purpose set forth.

4. In a brake, the combination of brake-beam hangers, brake-beams attached to the lower ends of said hangers, chains connecting said brake-beams and the operating-rod, a knuckle-joint arranged in said operating-rod, a swivel-lever connected to the upper end of said operating-rod, bearings connected in the upper end of the brake-beam hangers, spring connections between said bearings, connecting-rods secured to said brake-beam hangers, brake-shoe hangers connected to said rods, and brake-shoes supported by said hangers, all parts being arranged and operating substantially as herein shown and for the purpose set forth.

5. In a brake, the combination of brake-beam hangers, brake-beams attached to the lower ends of said hangers, chains connecting said brake-beams and the operating-rod, a knuckle-joint arranged in said operating-rod, a swivel-lever connected to the upper end of said operating-rod, bearings secured in the upper end of the brake-beam hangers, spring connections between said bearings, connecting-rods connected to said brake-beam hangers, brake-shoe hangers connected to said rods, and lugs projecting from the upper face of the truck carrying adjusting-screws adapted to operate against the said brake-beam hangers, substantially as herein shown and described.

6. In a car-brake, the combination with a car-truck, of a series of brake-beam hangers pivotally secured thereto, brake-beams having a chain connection supported by the said hangers, a bearing arranged at the upper end of each of the said hangers, means connected to the said bearings for retaining the said hangers in an operative position, brake-shoes, means for connecting said brake-shoes to the said hangers, an operating-rod connected to the said chain connection, a swivel-lever connected to said rod and adapted when operated to rotate the said rod thereby operating the said hangers and brake-shoes, substantially as described.

7. In a car-brake, the combination with a

car-truck, of a series of brake-beam hangers connected thereto, a pair of brake-beams supported thereby, a chain connection between the said brake-beams, brake-shoes connected to the said hangers, means for retaining said shoes and hangers in an inoperative position, an operating-rod carrying a knuckle-joint and connected to the said chain connection, and means for operating the said rod, substantially as described.

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

LEWIS C. TROMBLEY.

Witnesses:

JOHN NOLAND,

ALBERT J. WALKER.