(No Model.)

E. DEDERICK.

CAR BRAKE.

No. 432,515. Patented July 22, 1890.

Fig. 1.

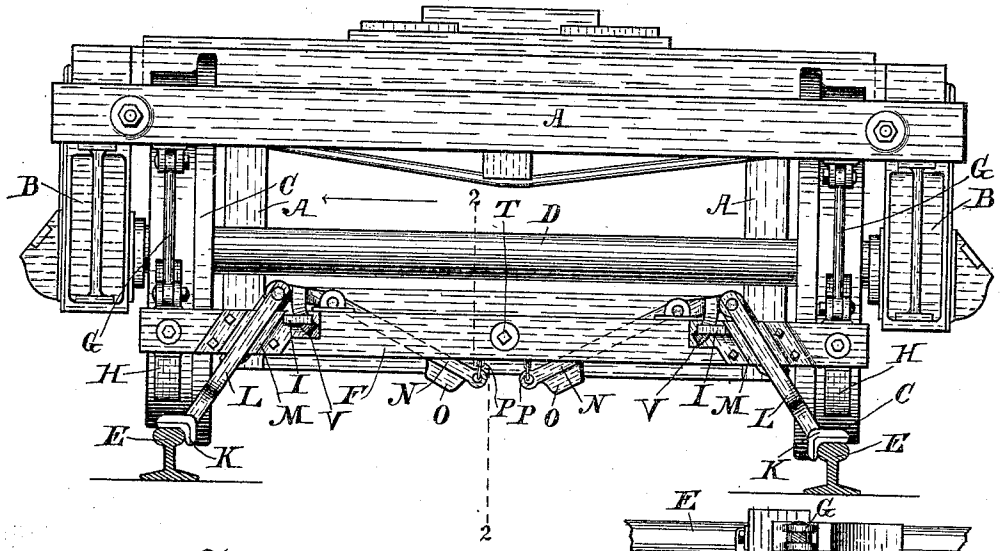


Fig. 2.

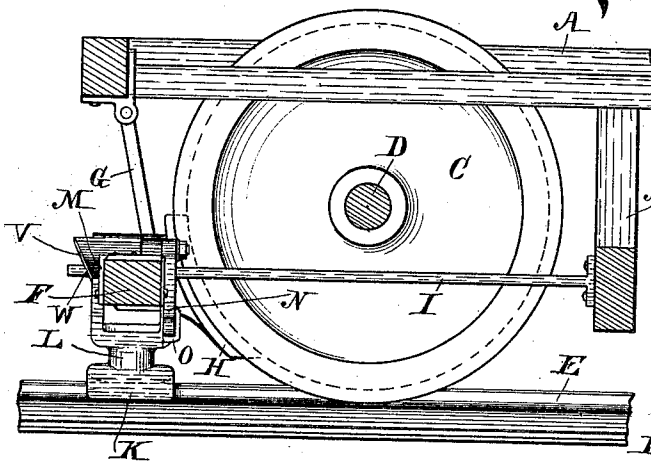
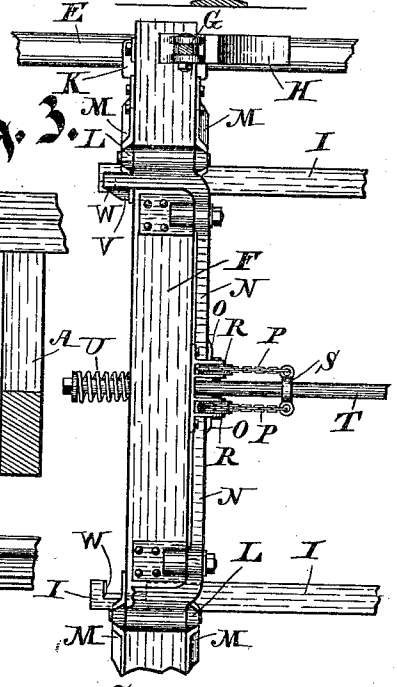


Fig. 3.



Witnesses.

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CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 432,515, dated July 22, 1890.

Application filed November 18, 1889. Serial No. 330,763. (No model.)

To all whom it may concern:

Be it known that I, EZRA DEDERICK, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Car-Brakes; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to a car-brake which is adapted for use on steam-railway cars or on street-cars or other vehicles of similar construction.

In the drawings, Figure 1 is an elevation of my device, shown in connection with the wheels and so much of the frame of a car as is necessary to show its relation thereto. Fig. 2 is a vertical transverse section of my device in connection with a portion of the car and the track, which view is taken on line 2 2 of Fig. 1. Fig. 3 is a plan or top view of the brake-beam and mechanism thereto attached.

The parts A A are a part of the car frame or truck, and are rigidly attached to each other. The axle-boxes B B are secured to the frame A A. The wheels C C are rigid on the axle D, which has its bearings in the boxes B B. The wheels are provided with the usual flanges, and are located and adapted to travel on the rails E E. A brake-beam F, suspended movably from the frame A by the pivoted rods G G, extends across the car near to the wheels, preferably a little below the horizontal plane of the axle. This beam F is preferably provided with brake-shoes H H, constructed and adapted to bear against the periphery of the wheels C C. Two rods I I are secured rigidly at one end to the frame A, passing transversely through the brake-beam F, and serve as guides on which the brake-beam is movable toward and from the wheels in the direction in which it is adapted to oscillate on the rods G G. A pair of brake-shoes K K—one near each end of the brake-beam F—are secured rigidly to the ends of the two sliding arms L L, which arms are bifurcated, passing on both sides of the beam F, and are supported and guided in their movements endwise in ways M M, fixed on the beam F. The brake-shoes K K are constructed in an angular form in cross-section, so as to be adapted to bear both on the top and against the inner edge of the top of the rails E E, and the rods L L are set in an inclined position to the rails, so that as the shoes are forced against the rails by their endwise movement downwardly the shoes are forced against the tops and inner sides of the rails. At their inner ends the arms L L are pivoted to one arm of the levers M M, which levers M M are medially pivoted on the brake-beam F, and are provided with gravity-weights O O, adapted to counterpoise the brake-shoes and lift them away from the track when not otherwise held up to their work. At their inner ends the levers N N are provided with chains P P, which run over pulleys R R, supported in brackets rigid on the beam F, and these chains are connected, through a collar S, rigidly to the endwise-reciprocating rod T. The rod T at its rear end passes through and is movable endwise in the beam F, and a coiled spring U is located around the rear part of the rod bearing against the beam and against a nut on the end of the rod, whereby the end of the rod is held yieldingly away from the beam. Downwardly-extending wedge-shaped keepers V V, formed integrally on the outer arms of the levers N N, enter recesses W W therefor in the rods I I, and are adapted to bear on their inner surfaces against the side of the beam F and on their outer surfaces against the outer walls of the recesses W W, whereby the beam F is held against rearward movement on the rods I I, when the outer ends of the levers N N are moved downwardly by the elevation of the inner ends of those levers by the forward movement of the rod T. The rod T is connected at its forward end (not shown in the drawings) to mechanism whereby the brake is to be operated. When the rod T is drawn forward, the beam F is thereby swung forward, carrying the shoes H H against the wheels C C, and thereupon, under continued forward movement of the rod T, the spring U yields and the chains P P are carried with the rod T, raising the inner ends of the levers N N and forcing the shoes K K down against the rails E E, thereby producing the friction on the wheels and rails through the shoes H H, and also friction on the rails through the shoes K K. These shoes K K are forced against the rails in such direction and under such leverage as not

only to produce a friction on the top of the rails, but also against their inner sides, and also, as the result of the rearward resistance of the shoes K K, producing a stronger resisting pressure upwardly against the wheels through the shoes H H, bearing, as before described, against the periphery of the wheels below and at an angle to the horizontal plane of the axle.

For use on street-cars the spring U would not be required, and on such cars the shoes H H might be omitted, in which case the beam F should be secured rigidly to the frame A. Under such construction the shoes K K could be used alone in connection with the mechanism involved in operating them directly.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a brake-beam, of a pair of sliding brake-shoes fixed on the ends of arms supported and movable on the brake-beam at an angle thereto, so as to have a downward and an outward bearing against the rails of the track, and means, substantially as described, for operating the brake-shoes, as set forth.

2. The combination, with a swinging brake-beam and brake-shoes secured rigidly to the beam, which shoes bear against the wheels of the car, of brake-shoes adapted to bear directly against the rails, which shoes are secured to endwise-moving arms supported and guided on the brake-beam, and means, substantially as described, for operating the brake-beam and sliding shoes.

3. In a car-brake, the combination, with a brake-beam, of brake-shoes rigid on the ends of arms movable endwise on the brake-beam, and levers pivoted medially on the brake-beam and attached at one end to the shoe-carrying arms and at the other ends provided with mechanism, substantially as described, for tilting the levers.

4. In a car-brake, the combination, with a movable brake-beam, of rods I I, passing loosely through the brake-beam, provided with recesses W W, oscillating levers N N, pivoted on the beam, and wedge-shaped keepers V V, adapted to enter the recesses W W, substantially as described.

5. In a car-brake, the combination, with a brake-beam, of thereon movable shoe-carrying arms, and levers pivoted medially on the beam, which levers are connected at one end to the shoe-carrying arms and at the other ends are provided with gravity-weights and are connected with mechanism for tilting them, substantially as described.

6. In a brake, the combination, with a swinging brake-beam F and thereon supported and moving shoe-carrying arms, of pivoted levers N N, chains P P, rod T, and spring U, substantially as described.

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

EZRA DEDERICK.

Witnesses:
C. T. BENEDICT,
ANNA FAUST.