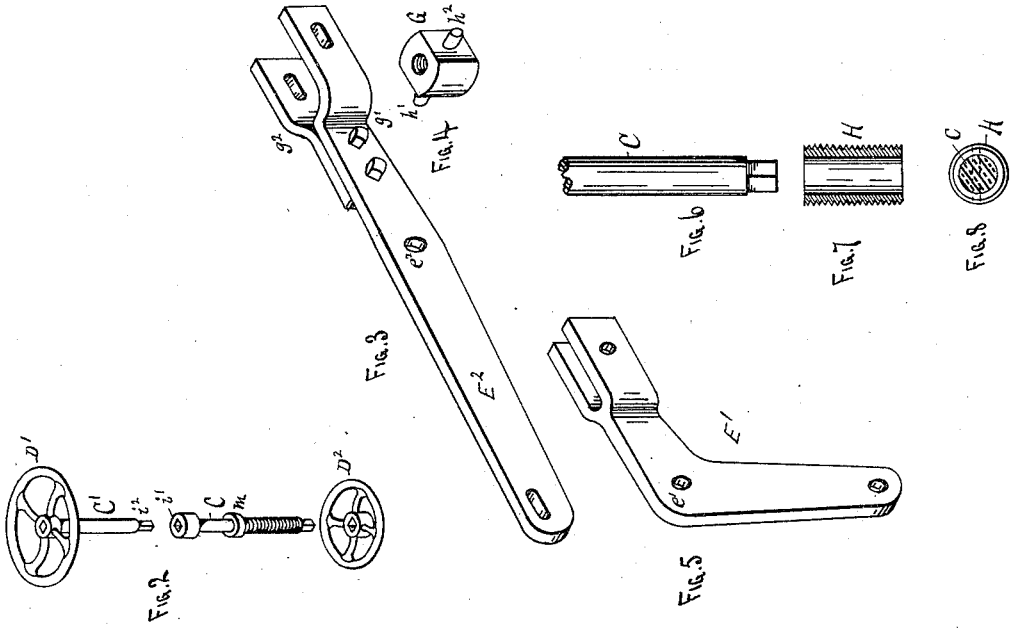
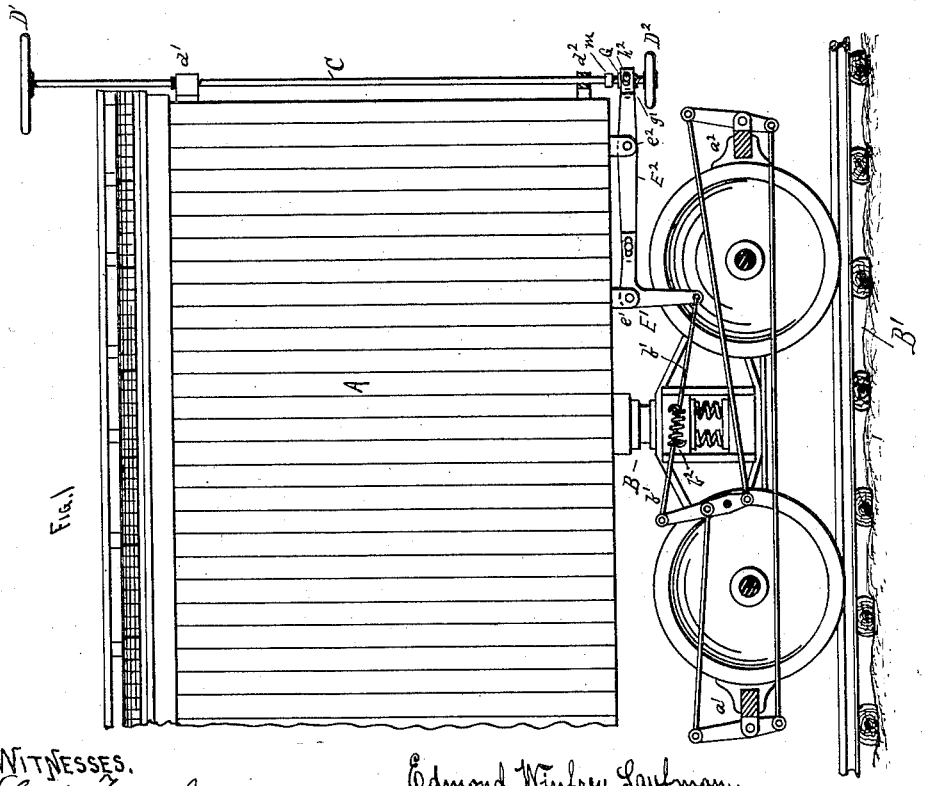
(No Model.)

E. W. LAUFMAN.

CAR BRAKE.

No. 306,407. Patented Oct. 14, 1884.





Witnesses.
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UNITED STATES PATENT OFFICE.

EDMOND WINFREY LAUFMAN, OF MERRIAM JUNCTION, MINNESOTA.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 306,407, dated October 14, 1884.

Application filed April 1, 1884. (No model.)

To all whom it may concern:

Be it known that I, EDMOND WINFREY LAUFMAN, a citizen of the United States, and a resident of Merriam Junction, in the county of Scott, in the State of Minnesota, have invented certain new and useful Improvements in Railroad-Car Brakes, of which the following specification is a full, clear, and exact description, reference being also had to the accompanying drawings, in which—

Figure 1 is a semi-sectional elevation of a freight-car, showing my improved brake attached thereto. Fig. 2 is an enlarged detached perspective view of the brake-rod and the brake-wheels, showing the manner of constructing them when the brake is used upon platform-cars. Figs. 3, 4, and 5 are enlarged perspective views of the compound levers and swivel-nut. Figs. 6, 7, and 8 are enlarged detail views of a portion of the lower end of the brake-rod, showing the manner of connecting the apparatus to ordinary broken rods.

A is a portion of a car-body; B, one of the trucks, and B′ the track.

a' a^2 are the brake-shoes, connected, in any well-known manner, by rods and levers, to a draw rod or rods, b', by which the brake is operated.

C is the brake-rod, suspended by hangers d' d^2 to the end of the car-body A, and provided upon its upper end with a hand-wheel, D′, above the car-body, and also with a second hand-wheel, D^2, below the car-body, so that the brake may be set or released from the top of the car in the ordinary manner or from the ground below.

E′ is a "bell-crank" or right-angled lever, pivoted at its elbow e' to the under side of the car-body, and connected by one end to one end of the draw-rod b', and pivoted by the other end to one end of a lever, E^2. This lever E^2 is pivoted at e^2 to the under side of the car-body A, and is provided with a fork-shaped end formed by a bend in the main lever at g', and bolting or otherwise securing to the main lever a smaller bent strap, g^2. In this forked end is pivoted, by trunnions h' h^2, a nut, G, adapted to receive a screw-thread upon the lower end of the brake-rod just above the lower hand-wheel, D^2. The holes in the fork through which the trunnions h' h^2 pass are slotted, so that the nut is free to move back and forth in the fork, so that no cramping occurs. The joint between the levers E′ and E^2 is also slotted, to allow free play to their movements. By this arrangement the turning of the brake-rod C to the right or left will run the nut G up or down and carry with it the levers E′ and E^2, and draw the brake-shoes against the wheels or release them therefrom. Thus the power of the screw on the brake-rod is utilized to operate the brakes, and by the arrangements of the levers and the swivel-nut the brake-shoes will be held firmly in the place where they are left by the hand-wheels without the use of ratchets or pawls or other holding devices.

The use of the extra hand-wheel D^2 on the lower end of the brake-rod is a very important part of my invention, as it enables the brakemen to set or release the brakes from the ground, and without the necessity of climbing upon top of the cars to release ratchets and pawls, as in the ordinary brakes. It very frequently happens that this ability to manipulate the brakes from below is of great importance, especially in switching at way-stations and in track-yards.

In Fig. 2 are shown the arrangements necessary to be used when the brake is applied to flat or platform cars where the brake-rods are to be removed when the cars are loaded, consisting in forming the rod C short enough so as not to project above the surface of the platform or floor of the car, and providing its upper end with a socket, i', into which the lower square end, i^2, of a rod, C′, having the hand-wheel D′ upon its upper end, fits. By this means the rod C′ may be removed when required without interfering with the remainder of the brake apparatus. The presence of the second wheel, D^2, is an especially advantageous feature when this brake is applied to flat cars, as every car is provided with an operative brake, even if the material with which the cars are loaded project over the ends of the cars so as to prevent the use of the rods C′.

In Figs. 6, 7, and 8 is shown the manner of applying my brake system to cars already provided with brakes of the ordinary pattern. This consists in attaching to the lower end of the outside of rod C a section of gas-pipe, H,

having a screw-thread cut upon its exterior to fit the nut G. By this means no necessity exists of cutting a screw-thread upon the brake-rod itself. A collar, *m*, will be attached to the brake-rod at the upper end of the screw-thread, against which the nut G strikes to prevent its being run too high and thus set the brakes too tightly. The screw-power is so great that if some stop, such as the nuts *m*, were not used, great danger would exist of either "sliding" the car-wheels or breaking the rods, &c.

To still further prevent the danger of breakage, I arrange the rod *b'* in two parts, and provide each part with hooked ends, and insert these hooked ends from opposite ends of a coiled spring, b^2, so that when the brake is set the spring will be compressed and the power passed through the spring b^2 to the shoes instead of directly to the shoes. By this means the brake-rod C may be revolved to a greater extent without danger of sliding the wheels or breaking the rods or levers than if no springs were used.

Having described my invention and set forth its merits, what I claim is—

1. In a railroad-car brake, the combination of a brake-rod, C, provided with a screw-thread, and with hand-wheels D' D^2 above and below or near the lower line of the body of the car, pivoted lever E^2, having swivel-nut G, and pivoted bell-crank lever E', connecting said lever E^2 and the brake-shoes of the car, substantially as and for the purpose set forth.

2. In a railroad-car brake, the combination of the brake-rod having a screw-thread thereon, a hand-wheel, D', attached to said brake-rod above the line of the car, a hand-wheel, D^2, attached to said brake-rod below or near the lower line of the car, a nut, G, adapted to fit the screw-thread upon said rod, and means for connecting said nut with the levers and rods for operating the brakes, substantially as described.

3. In a railroad-car brake, a brake-rod, C, provided with a screw-thread, and adapted to be revolved, a nut, G, levers E' E^2, brake-shoes *a' a²*, and draw-rod *b'*, connecting said levers with said shoes, and provided with spring b^2, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

EDMOND WINFREY LAUFMAN.

Witnesses:
C. N. WOODWARD,
LOUIS FEESER, Sr.