

(No Model.)

H. BROCKMAN.  
BRAKE FOR CARS.

No. 386,766.

Patented July 24, 1888.

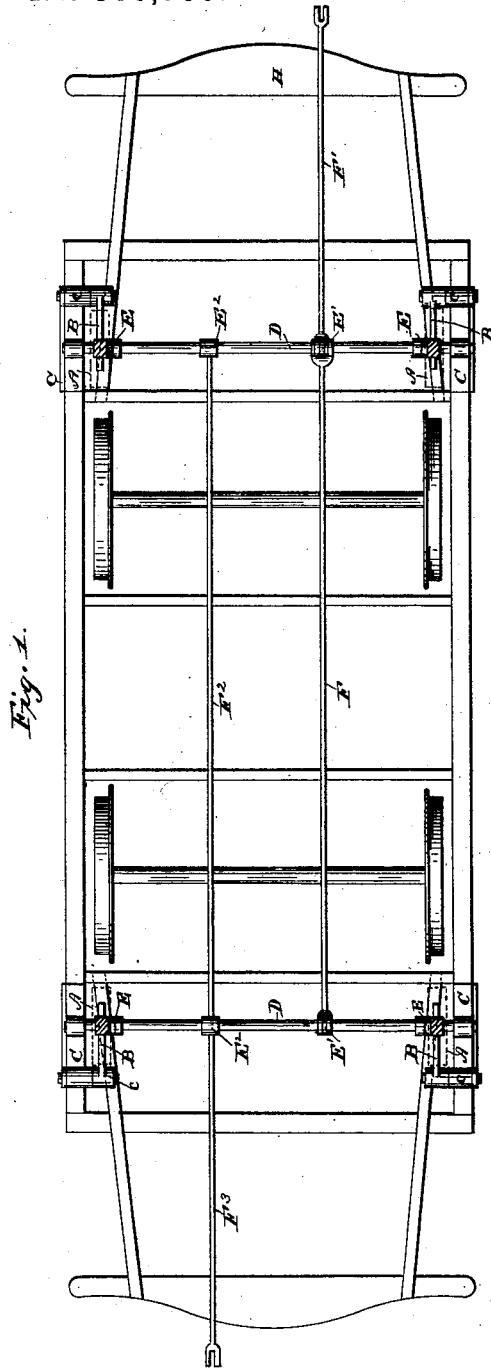


Fig. 1.

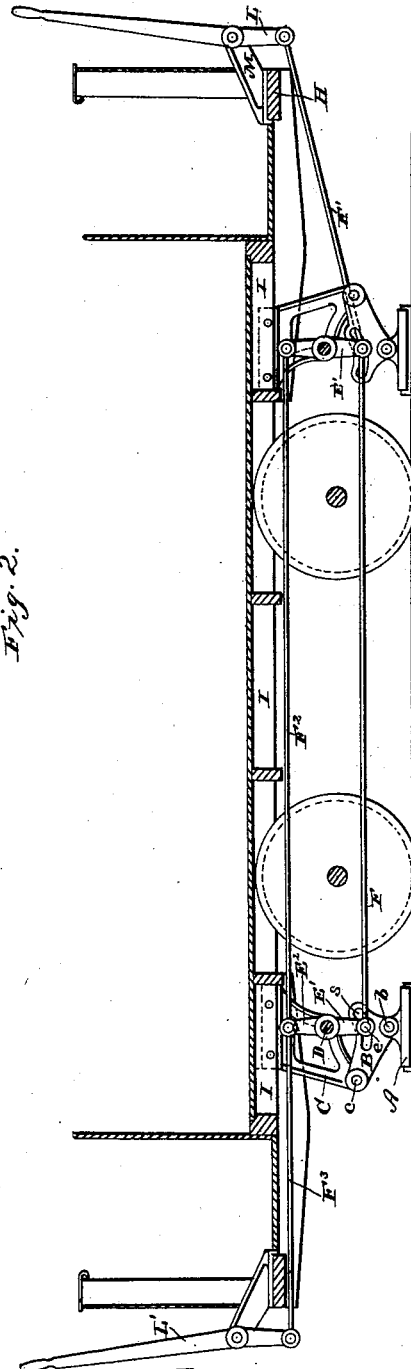


Fig. 2.

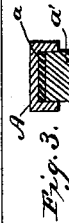


Fig. 3.

Witnesses.  
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# UNITED STATES PATENT OFFICE.

HERMAN BROCKMAN, OF CINCINNATI, OHIO.

## BRAKE FOR CARS.

SPECIFICATION forming part of Letters Patent No. 386,766, dated July 24, 1888.

Application filed March 19, 1888. Serial No. 267,636. (No model.)

*To all whom it may concern:*

Be it known that I, HERMAN BROCKMAN, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Brakes for Cars; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

My invention relates to that class of car-brakes in which the brake-shoes are applied directly to the rails upon which the car runs, instead of to the wheels of the car; and it consists in a certain novel construction and combination of parts, whereby a most efficient contrivance is produced that is simple, inexpensive, and not liable to get out of order, and that is especially adapted for use on horse-cars or the cars of a cable railroad, though applicable to cars generally.

In the accompanying drawings, Figure 1 represents a bottom plan view of a car equipped with my improved brakes. Fig. 2 is a longitudinal vertical section of the same, taken on the line *x x*, Fig. 1; and Fig. 3 is a sectional view of one of the brake-shoes.

Similar letters of reference in the several figures indicate the same parts.

The letters A indicate the brake-shoes, of which there are preferably four—one being located adjacent to each wheel. These shoes consist each of a metal box, in which is inserted a backing of rubber or other equivalent elastic material, *a*, and a facing or friction-surface, *a'*, of hard wood or other material, which, when co-operating with the track, will produce good friction. Each shoe is pivoted at *b* to a yoke or arm, B, that is in turn pivoted at *c* to a bracket, C, bolted or otherwise suitably secured to the sill I of the car. A curved slot, *s*, is formed in the arm B, and into this slot projects a pin or projection, *e*, on a downwardly-projecting arm, E, fixedly secured to a cross-shaft, D, which also has its bearings in the bracket C, as shown. There are of these cross-shafts D one at each end of the car, and each one carries two of the arms E, as shown in Fig. 1. Each of said cross-shafts also carries another downwardly-projecting arm, E', which is connected by a rod, F, to a corresponding arm

E' on the other cross-shaft, and to one of said arms E' is also connected a rod, F', whose outer end is jointed to the lower end of a hand-lever, L, pivoted to a bracket or support, M, projecting from one of the timbers H of the platform, as shown in Fig. 2.

By drawing upon the lever L the shafts D will be rocked through the instrumentality of the rods F F' and arms E' E', thus causing the arms E E' to be swung and the pins *e* thereon to traverse the slots *s* in the arms or yokes B and force down the brake-shoes into contact with the track-rails, as shown in Fig. 2, thereby producing friction sufficient to stop and hold the car. A contrary motion of the hand-lever will of course throw the brake-shoes out of contact with the rails.

In order that the brakes may be applied from either end of the car, or from both ends simultaneously, I preferably secure an additional arm, E<sup>2</sup>, to each of the cross-shafts D D and connect said arms E<sup>2</sup> E<sup>2</sup> together by a rod, F<sup>2</sup>, and one of them by a rod, F<sup>3</sup>, to a hand-lever, L', similar to the one L at the opposite end of the car. The arms E<sup>2</sup> E<sup>2</sup> project upwardly from the shafts D D, and consequently similar movements of the two hand-levers L L' produce like effects—that is to say, when either lever is drawn inward the brakes are applied, and vice versa.

By the provision of two hand-levers an attendant at either end of the car can apply the brakes, and in cases of emergency the brakes can be applied from both ends simultaneously by different persons—as, for instance, by the conductor and driver of horse-cars or by the conductor and grip-man on a cable-road system.

By pivoting the brake-shoes and providing their friction-surfaces with yielding backings they are caused to readily adapt themselves to the tracks and a gradual and easy application of the brake is rendered practicable.

Having thus described my invention, what I claim as new is—

1. In a car-brake, the combination, with the brake-shoes, of the arms or yokes to which they are pivotally connected, and pivotal connections between said arms or yokes and the car, and mechanism, substantially as described, for operating said arms or yokes, as set forth.
2. The combination, with the brake-shoes,

of the slotted arms or yokes and the rods for moving said levers, to which they are connected, and the vibrating lever having the pins or projections entering the slots of the arms or yokes, substantially as described.

5 3. The combination, with the brake-shoes, of the slotted arms or yokes to which said brake-shoes are hung, the vibratory arms having the pins or projections, the cross-shafts, and connections, substantially as described, for  
10 operating all the brake shoes simultaneously.

4. The combination, with the brake-shoes, of the slotted arms or yokes, the vibratory levers having the pins or projections, the cross-  
15 shafts, the arms thereon, the connecting-rods, and the hand-levers at opposite ends of the car, all arranged and operating substantially as described.

5. The combination, with the brake-shoes A, of the arms or yokes B, brackets C, levers E, and shaft D, all constructed and arranged substantially as described. 20

6. The combination, with the brake-shoes having the friction-faces and the elastic backings, of the slotted arms or yokes to which  
25 said brake-shoes are pivoted and the vibratory arms having the pins or projections entering said slots, and rods for moving said arms, substantially as described.

HERMAN BROCKMAN.

Witnesses:

HENRY GROENE,  
FRANK A. SCHMITZ.

It is hereby certified that in Letters Patent No. 386,766, granted July 24, 1888, upon the application of Herman Brockman, of Cincinnati, Ohio, for an improvement in "Brakes for Cars," errors appear in the printed specification requiring the following corrections, viz: On page 2, in lines 1-2, the words "and the rods for moving said levers" should be stricken out, and the same words should be inserted after the word "yokes" in line 5, same page; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 14th day of August, A. D. 1888.

[SEAL.]

D. L. HAWKINS,

*Assistant Secretary of the Interior.*

Countersigned:

BENTON J. HALL,

*Commissioner of Patents.*