

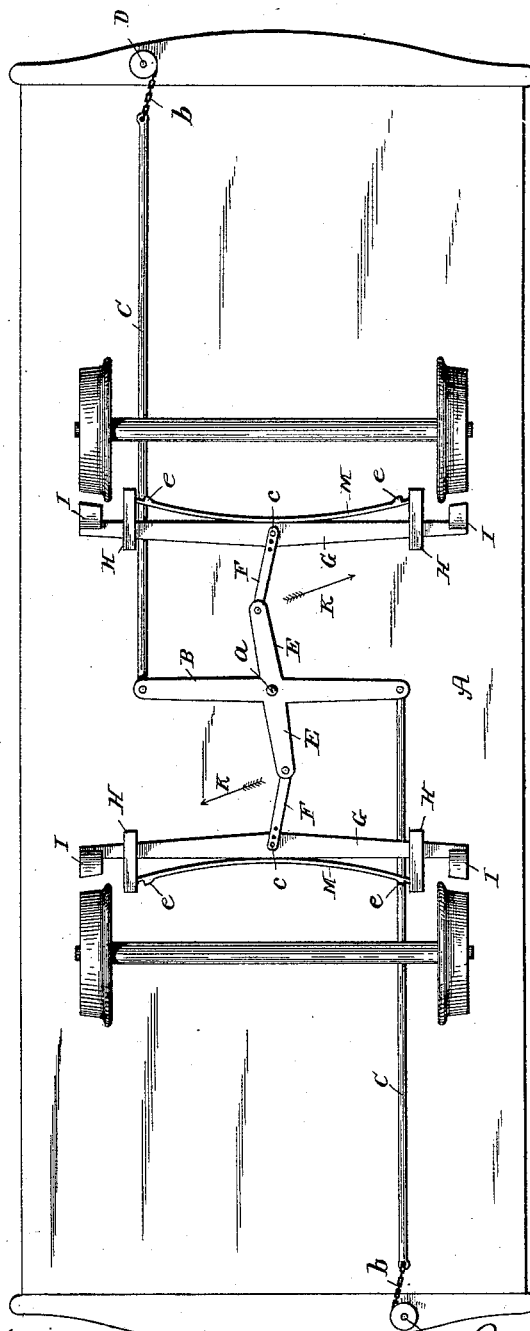
(No Model.)

2 Sheets—Sheet 1.

P. J. BORIS.
CAR BRAKE.

No. 422,330.

Patented Feb. 25, 1890.



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Witnesses

Edwin L Bradford
Jonathon Ciley

Inventor

A Pierre J. Boris,

By his Attorney in fact
Chas E Barber

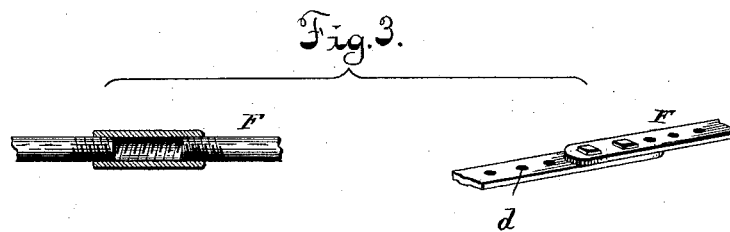
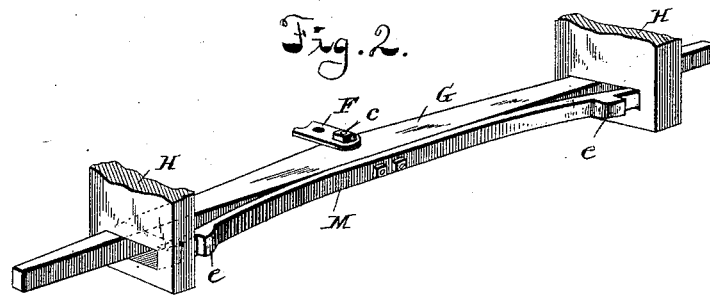
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Pierre J. Boris,
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By His Attorney
Chas. E. Barber.

UNITED STATES PATENT OFFICE.

PIERRE J. BORIS, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF TWO-THIRDS
TO HORACE M. OLIVER AND T. HENRY PEARSE, OF SAME PLACE.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 422,330, dated February 25, 1890.

Application filed December 23, 1889. Serial No. 334,767. (No model.)

To all whom it may concern:

Be it known that I, PIERRE J. BORIS, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Car-Brakes, of which the following is so full, clear, and exact a description as will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of my improved brake. Fig. 2 is a detailed view of one of the brake-beams, showing the recess in the stirrup and the shouldered end of the spring which operates the beam and shoes to keep them normally out of contact with the tread of the wheels of the car. Fig. 3 is a detailed view of an adjusting device for the link which connects the brake-beam with the main operating-lever.

The object of the invention is to provide a combined universal brake mechanism by the use of which a brake or system of brakes may be easily and quickly applied and released in the shortest possible time with the least amount of lost motion and with the least expense of physical force.

In the accompanying drawings, A designates the car-body, to the center of which I have pivotally attached at *a* the main lever B. This lever B is double-ended, and at each end I pivotally attach the rods C C, which connect the main lever B with the brake-rods D D. At each brake-rod I provide a piece of chain *b* to wind around the brake-rod D. At each side of the pivotal point *a* of the main lever B, I provide arms E E, which are rigid with the lever B and extend at right angles to the line of the extended ends of the lever B. These arms E E may be cast or forged integral with the lever B. To each of these arms E E, I pivotally attach two other arms F F, which are also pivotally secured to the brake-beams G G at *c c*, and in some instances the length of these arms may be adjusted by perforating the arms, as at *d d*, and moving the arms on the bolts at these points. The brake-

beams G G are held in place by suitable stirrups H H and carry the usual brake-shoes I I at the outer ends. The stirrups or blocks H H are perforated and receive the ends of the springs M M, which springs are provided with shoulders *e e* to prevent the springs from being forced too far into the blocks or stirrups H H.

From the nature of the case the movement of the main lever B to apply the brakes will force the brake-beams laterally toward the stirrup in opposite directions and toward opposite sides of the car, as shown by the arrows K K, and the shoulders *e e* on the springs M M will check this movement of the brake-beams, as will readily be understood. The length of the arms E E may be increased or diminished by screw-threading the arm at the central portion and cutting it in two in the middle and providing it with a hollow sleeve correspondingly screw-threaded internally. It may also be made in two overlapping strips provided with a series of holes and bolted together. I simply suggest these two ways; but any equivalent means will secure the same result and may be substituted.

From the foregoing it will be obvious that four brakes may be applied with the same amount of power now used to operate two, and the action of the brake is free in applying the brake, and the force is equalized, owing to the pivotal connections all through the mechanism and also to the fact that the main lever is pivoted centrally. The length of the arms E E is always adjusted with relation to the distance the brake-shoes are to be moved and the power required.

Having described the construction and advantages of my brake, what I wish to secure by Letters Patent, and what I therefore claim, is—

1. In a universal brake mechanism, a brake-beam supported by stirrups provided with recesses, in combination with shouldered springs fitting into said recesses and pressing against the beam to keep it normally out of contact with the wheels, as described.
2. A universal brake-lever having four

rigid arms and secured positively at a single
central pivotal point, in combination with
brake-beams having double-ended springs se-
cured thereto and said springs having shoul-
5 ders, and perforated stirrups for said brake-
beams and the shouldered ends of the springs,
and the intermediate connections, substan-
tially as and for the purposes specified.

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

PIERRE J. BORIS.

Witnesses:

T. HENRY PEARSE,
A. M. ROSS.