

(No Model.)

E. EBI.

AUTOMATIC CAR BRAKE.

No. 302,716.

Patented July 29, 1884.

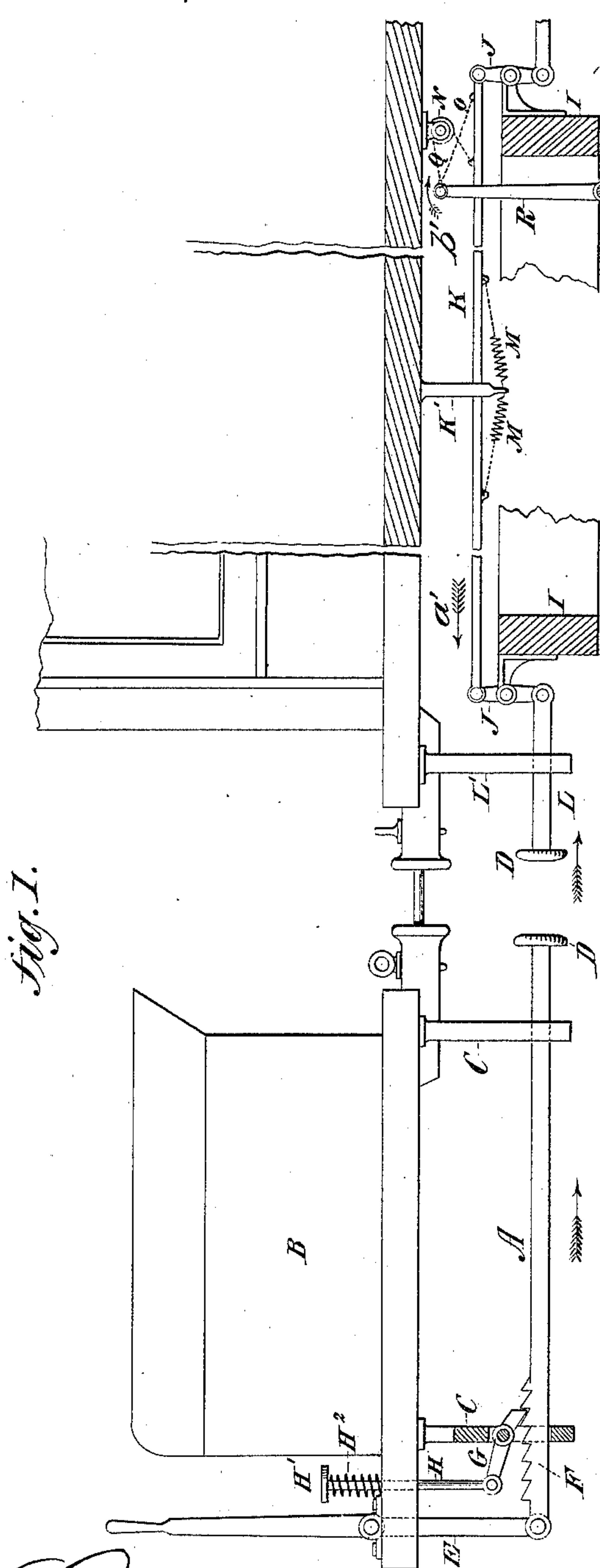


fig. 1.

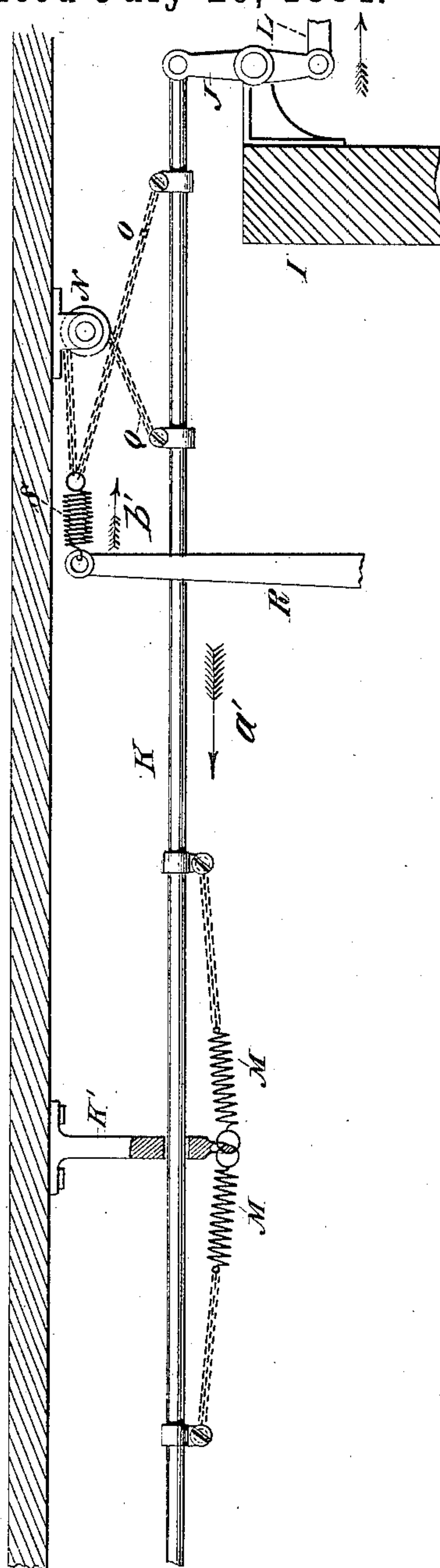


fig. 2.

~~WITNESSES:~~

WITNESSES:
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AUTOMATIC CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 302,716, dated July 29, 1884.

Application filed March 7, 1884. (No model.)

To all whom it may concern:

Be it known that I, EDWARD EBI, of Cedar Rapids, in the county of Linn and State of Iowa, have invented a new and Improved Automatic Car-Brake, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved car-brake, by means of which all the brakes of a train can be applied automatically by the momentum of the cars when the engineer desires it.

The invention consists in the construction and arrangement of parts, as will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a longitudinal partly sectional elevation of my improved car-brake, showing it applied on a car and tender. Fig. 2 is an enlarged longitudinal view of the brake-operating mechanism.

A bar, A, is held to slide longitudinally under the tender B in hangers C, projecting downward from the bottom of the tender, which bar is provided at its rear end with a head, D, and at its front end it is pivoted to a lever, E, pivoted in the bottom of the tender.

On the upper edge of the bar A a rack, F, is formed, at the front end, above which rack a locking-pawl, G, is pivoted in the front hanger, C, which pawl is pivoted at its front end to a rod, H, projecting up through the bottom of the tender, and provided on its top with a foot-plate, H'. The said rod H is surrounded by a spring, H², which presses it upward.

In place of the rack and the above-described locking device, the lever E can be provided with any of the well-known locking devices. On the outer cross-beam, I, of each truck of each car a lever, J, is pivoted, which levers have the upper or inner ends connected by a rod, K, extending longitudinally under the bottom of the car, which rods pass loosely through rods or hangers K'. To the opposite end of each lever J a short rod, L, is pivoted, which projects toward the end of the car, is held in a hanger, L', and is provided at its outer end with a head or buffer-plate, D, on

the same level with the head D on the bar A under the tender and the heads D on the other cars.

To the hanger K' two springs, M, are fastened, which have their opposite ends connected by chains or directly with the rod K at opposite sides of the said hanger K'.

A pulley, N, is pivoted in hangers on the bottom of the car, and over the said pulley a chain, Q, passes, which has its opposite end connected with the upper end of a brake-lever, R, connected with the brake-shoes P. A chain, O, is also connected with the lever R and with the rod K, the chains O and Q crossing each other, as shown in the drawings. If desired, the chains O and Q can be connected with a spring, S, secured to the upper end of the lever R, as shown in Fig. 2.

The operation is as follows: If the engineer wishes to check the speed of the train, he swings the upper end of the lever E in the direction toward the front end of the tender, whereby the rear end of the bar A is projected from the rear end of the tender, and if the speed of the engine is suddenly checked the momentum of the cars forces them forward, whereby the heads D of the several cars come in contact, and whereby the rods K are moved in the direction of the arrows a'. Thereby each chain Q is pulled in such a manner that it pulls the upper end of the brake-lever R in the direction of the arrow b', thereby pressing the brake-shoes against the wheels. If the train moves in the inverse direction of the arrow a', the locomotive being at the front, as then moving, the rods K are moved in the inverse direction of the arrow a' and pull on the levers R by means of the chains O. If the brakes are to be released, the pawl G is disengaged from the rack F, or the lever E is unlocked in any other suitable manner, and the upper end of said lever E is moved toward the rear end of the car, whereby the bar A is drawn back. The springs M, acting on the rods K, bring them back to the normal position, ready for again applying the brakes.

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

1. The combination of a tender with the bar A, held to slide longitudinally beneath

the same, and provided at its front end with a buffer, D, a hand-lever, E, pivoted to the rear end of said bar, and also pivoted to the tender above the bar, and a locking-pawl constructed to engage said bar, substantially as set forth.

2. The combination, with a tender, of the longitudinal sliding toothed bar A, mounted in slotted hangers C, and provided with a buffer, D, at its front end, and pivoted to the pivoted hand-lever, as shown, pawl G, pivoted within the rear hanger, C, over the rod A, and a vertically-sliding spring-operated rod, H, pivoted to said pawl, and extending up through the tender-platform, substantially as shown and described.

3. The combination, with a car, of the levers J, pivoted on the front bar of the trucks, the rod K, connecting them, the bars L, having heads D and chains for connecting the said rods with the brake-lever R, substantially as herein shown and described.

4. The combination, with a car, of the levers J, pivoted on the front bars of the trucks, the bars L, the rods K, connecting them, and the springs M, for bringing the bars K back into the normal position, substantially as herein shown and described.

5. The combination, with a car, of the levers J, pivoted on the front bars of the trucks, the rods K, connecting them, the bars L, the pulley N, the chains O and Q, and the brake-lever R, substantially as herein shown and described.

6. The combination, with a car, of the levers J, the rods K, the pulley N, the brake-levers R, the chains O and Q, and the spring S, substantially as herein shown and described.

EDWARD EBI.

Witnesses:

JOHN B. BUTLER,
J. B. MOORE.