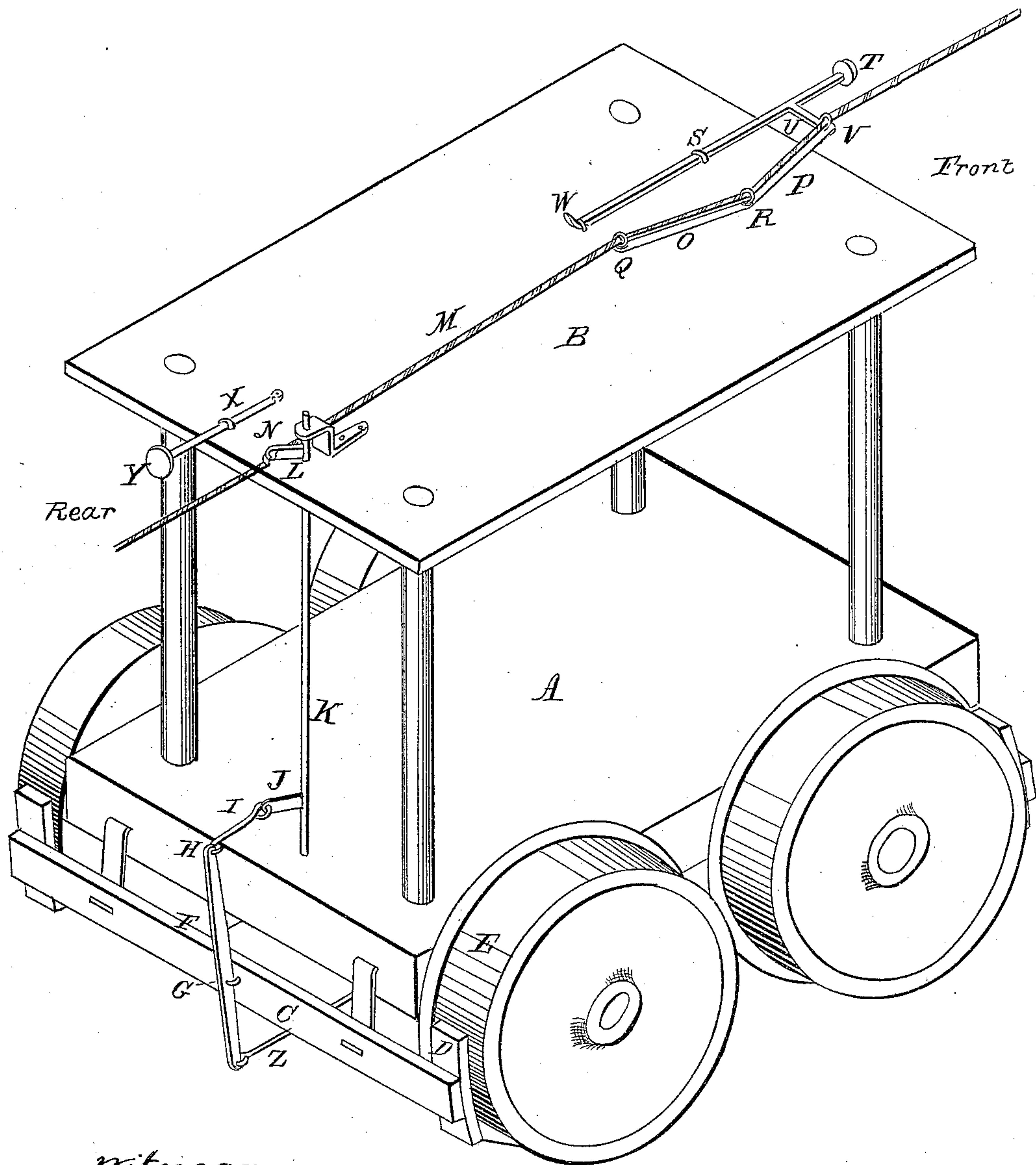


D. HARRIGAN.

Car Brake.

No. 39,097.

Patented June 30, 1863.



*Witnesses.*  
*Thos R Roach*  
*Edmund Masson*

*Inventor*  
*Dennis Harrigan*  
*By his attorney*  
*Sam Cooper*



# UNITED STATES PATENT OFFICE.

DENNIS HARRIGAN, OF WINCHESTER, ASSIGNOR TO ALFRED B. ELY,  
OF NEWTON, MASSACHUSETTS.

## IMPROVEMENT IN SIGNAL-BELL AND BRAKE ATTACHMENTS FOR RAILROAD-CARS.

Specification forming part of Letters Patent No. 39,097, dated June 30, 1863.

*To all whom it may concern:*

Be it known that I, DENNIS HARRIGAN, of Winchester, in the county of Middlesex and State of Massachusetts, have invented a certain new and useful Compensating Attachment to Brake-Signal and Bell Cords of Railroad-Cars, &c., of which the following specification and accompanying drawing form a full description.

The object of my invention is to take up and keep under control the slack of the cord.

In the drawing, which, for convenience of sight and reference, represents my apparatus as on the outside instead of the inside of the car-roof, A is the floor of the car. B is the roof. C is the brake-beam. D is the brake pressing against the wheel E. F is a brake-lever fastened at its fulcrum G to the brake-beam. To the end of the upper and longer arm of this lever, at H, is fastened one end of a link, I, the other end of which is fastened to a short lever or arm, J, upon the rod K, which runs from the floor to the roof of the car, and turns in bearing at each end.

L is another short lever or arm of the rod K, parallel to and in the same plane as J. Through the outer end of this arm L is a small hole at N, through which passes a cord, M, having a knot on the outer side of the hole at N, to prevent its drawing through forward, and when the cord is drawn forward to pull the arm L forward with it.

O and P are two arms of a compensating-lever attachment for taking up the cord and keeping it taut. The inner or hinder end of the arm O is pivoted to the car at Q, and the two arms O and P are pivoted together at R. The outer or forward end of the arm P is pivoted at V to an arm, U, of a sliding bunter, S, which is stapled to the car-roof, so as to slide back and forth, but is turned up at W, so as not to slide out quite far enough to allow the arms O and P to come in a straight line when drawn out.

At Q, R, and V are staples or eyebolts, through which the cord M passes freely. The bunter S has a head at T to meet the head of a stationary bunter on the next forward car, like the bunter X, with its head Y, in the drawing. The line running forward is in-

tended to reach the engineer, and to be attached to a bell, or otherwise.

Z is a rod passing from the lower or shorter end of the brake-lever F to the opposite brake-lever, so as to operate both brakes at once.

The operation of the mechanism is as follows: By pulling at the front (and this may be done by the engineer or otherwise) upon the cord M, and drawing the knot at N against the arm L, the arm J will pull upon the brake-lever F through the link I, and force the brake D against the wheel E. By pulling at the rear upon the cord M the bell will be rung or signal given to the engineer, or otherwise. As the cars come together when the speed slackens, the fixed bunter, like X, on the forward car will strike against the sliding bunter S and push it backward, the ends V and Q of the arms O and P will approach each other, and the point R will recede from the bunter. The cord, being attached through the eyebolts Q R V, will in that way be kept taut, and at all times under command, without the slack dropping down. Where a cord or equivalent is used for brakes, signals, or bells on cars, and the like, which are liable to approach and recede, it must be long enough to reach the whole length of the train when moving at the greatest stretch. Ordinarily, when the cars come together, as they do in braking up or stopping, the cord becomes slack, and hangs down and becomes a source of trouble and annoyance, and sometimes of danger. When in a slack condition, signals or otherwise cannot be communicated suddenly, as time is required to draw up the cord, and it is not under perfect control. My invention remedies all this and takes and holds up the slack of the rope or cord, keeping it at all times taut and under command in any direction. It may be used in connection with brakes alone, or in connection with bells alone, or in connection with both at the same time.

Having thus fully described the nature, object, and purpose of my invention, I would state that I am aware that jointed rods or arms placed between the ends of two adjacent cars and working vertically, have been used for compensating for the slack of a bell

or brake rope. This I do not claim, as such location is very inconvenient; but

What I claim is—

In combination with the jointed arms O P, placed on or under the roof of the car and working horizontally, the movable bunter T and rigid bunter Y, for the purpose of mak-

ing a compensating attachment for a car-brake or bell-rope, substantially as described.

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