

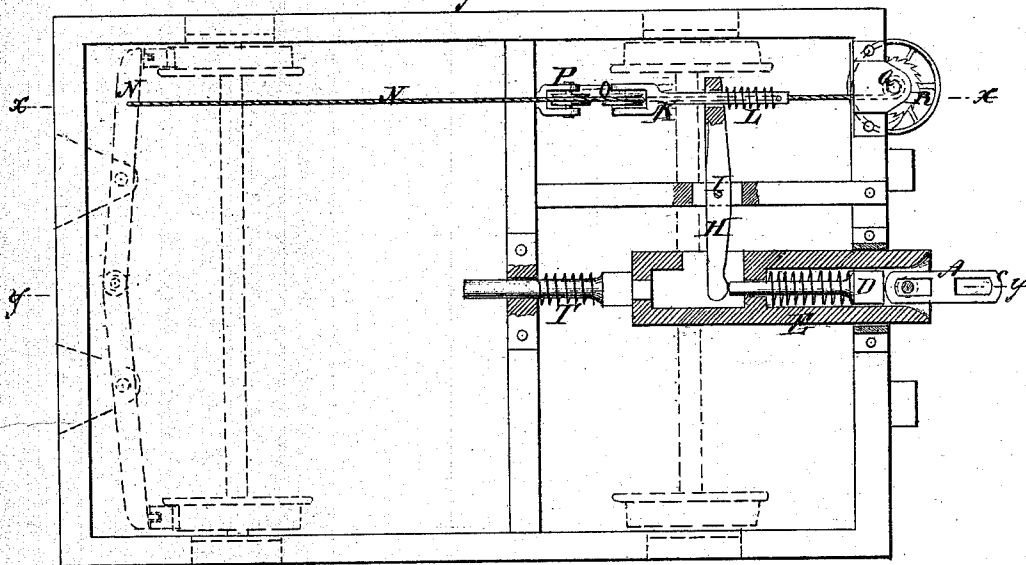
L. A. RUSSELL.

Car Brake.

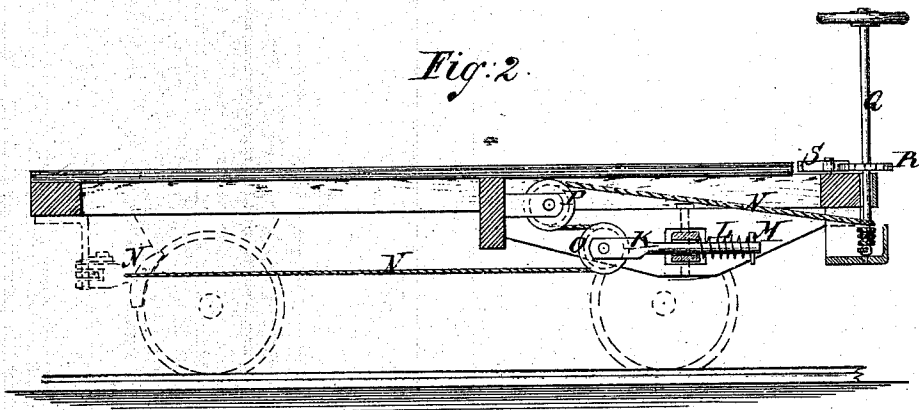
No 112,499.

Patented March 7, 1871.

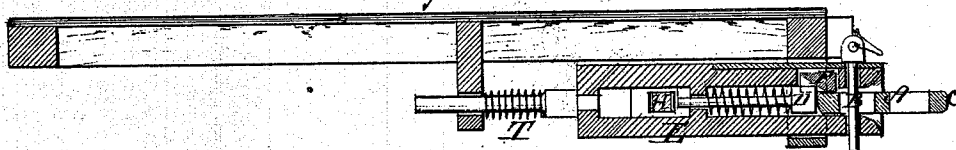
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses:  
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# UNITED STATES PATENT OFFICE.

LYMAN ALPHONZO RUSSELL, OF SHREWSBURY, VERMONT.

## IMPROVEMENT IN RAILWAY-CAR BRAKES.

Specification forming part of Letters Patent No. 112,499, dated March 7, 1871.

### *To all whom it may concern:*

Be it known that I, LYMAN ALPHONZO RUSSELL, of Shrewsbury, in the county of Rutland and State of Vermont, have invented a new and Improved Car-Brake; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

My invention relates to car-brakes; and consists in certain improvements thereon, which will be first described in connection with whatever will tend to render them more intelligible, and then be clearly pointed out in the claims.

Figure 1 is a plan view of the bottom of a car with my improvements applied to it, some of the parts being in section. Fig. 2 is a longitudinal section of the same, taken on the line  $x x$ ; and Fig. 3 is a section on the line  $y y$ .

A is the shackle. It is made with long slats for the coupling-pin B, and is curved horizontally and vertically at the ends C, so that, by the spring-actuated push-pins D pressing against the said ends and forcing the end walls of the slots against the pins, the said shackles will be held either in the axial line of the buffer E or obliquely thereto, for entering the car to be coupled.

E is a weight, arranged in a recess in the buffer to rest on the inner end of the shackle and hold it in a horizontal line when connected at one end only. This weight has an oblique side at the rear, against which push-pin comes and raises it, when the shackle is disconnected to hold it up out of the way when the shackle is to enter. The entrance of the shackle presses the push-pin back and allows the weight to fall on the end, where it remains and holds the said shackle in the horizontal position as long as it is connected by the pin D. This push-pin D acts at the rear end on the lever H, pivoted at I, and projecting through a slot into the recess in the buffer in which the said pin slides, and behind it, at the other end, the said lever carries a pulley-supporting block, K, passing through it horizontally, and capable of sliding back and forth. The arm of this pulley-block has a coiled spring, L, placed on it between a holding-pin, M, at the end and side of the lever H.

M is a cord or chain, connected at N with the brake, of ordinary construction, and passing over the pulley O in the block K, thence back to the pulley P, attached to the frame, and thence to the common brake-shaft Q, arranged for winding it up in the usual way, and with the ordinary ratchet-wheel R and pawl S.

When the forward car or locomotive slacks up and forces the shackle back against the push-pin, the latter, acting on the lever H, the block K, and pulley O, will, in case the cord is wound upon the shaft Q sufficiently and held by the ratchet and pawl, force the cord or chain N forward and bring the brakes into action; but if it be desired not to bring the brake into action, the cord or chain may be let out by the shaft Q, so that the action of the lever H will not move the brake.

By this arrangement, the shafts G being properly set, the engineer or a brakeman on a forward car, by braking up the locomotive or forward car in the ordinary way, may set all the other brakes of the train in action—that is, in case of running on a level or down grade, where the rear cars will come together when the others are slacked up; but, in case of going up a grade, the brake of a rear car should be brought into action first by a brakeman, as well as the front car or locomotive.

It will be seen, also, that by this arrangement the back-acting force of the cars coming together, usually all delivered on the buffer-spring T, is divided between it and the spring L, as no material amount of force can be applied to the buffer until the lever H is forced against the spring L sufficiently to allow the end wall of the slot in the shackle to come against the pin B. The spring L also relieves the cord or chain N of the undue strains to which it would be subjected if the lever H were rigidly connected to the pulley-block K.

The spring of the push-pin maintains a pressure on the shackle of sufficient force to hold it by the frictional contact of the parts in any direction in which it may be set.

The brake-shaft Q may be set for causing the brake to be acted automatically or not, and it may be painted in different colors or have any other distinguishing sign to show which way it is set.

The push-pin holds the coupling-pin up till

the shackle enters, and it falls into the slot of the pin.

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

1. The spiral spring working inside the buffer E, the lever H, pivoted at I, and the spring L on the movable block K, all combined, as described, with push-pin D in the buffer, to receive the back-acting force on said pin, in the manner specified.

2. The springs T L and lever H, combined, as described, with the movable buffer E, for the purpose of dividing up the strain thereon

that occurs after the end of the slot in the shackle has reached the pin B.

3. The combination, with a brake-cord and winding-shaft, of movable block K, pulley O, pivoted lever H I, and push-pin D, all arranged, as set forth, to allow the slacking of the locomotive to operate or not to operate, the brake, as may be desired.

The above specification of my invention signed by me this 10th day of February, 1870.

LYMAN ALPHONZO RUSSELL.

Witnesses:

GEO. W. MABEE,

ALEX. F. ROBERTS.