

Car Brake.

Patented Dec. 7, 1869.



Inventor;
J. B. Van Dyne,
per Melice Grant & Co
Attys.

United States Patent Office.

J. B. VAN DYNE, OF NASHVILLE, TENNESSEE.

Letters Patent No. 97,730, dated December 7, 1869; antedated November 30, 1869.

IMPROVED RAILWAY-CAR BRAKE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, J. B. VAN DYNE, of Nashville, in the county of Davidson, and State of Tennessee, have invented a new and improved Brake for Railroad-Cars; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1 represents a vertical longitudinal section of a car to which are attached the devices for simultaneously operating the brakes of the whole train, and

Figure 2, a similar section of another car with my improvements applied, which, in a train, would be placed in the rear of the car shown in fig. 1.

The object of my invention is to provide an improved method of operating railroad-car brakes, by means of which all the brakes of a train can be simultaneously applied and released, or the brakes of each car operated separately, as desired; to which end,

My improvements consist in a vertically-movable block, containing three sheaves or grooved pulleys, and placed in a frame beneath the centre of a railroad-car, the same being connected, by a rope or chain passing over its lowest pulley, and under guide-pulleys on the frame, to brake-beams on each side of the truck-wheels, and likewise connected, by ropes or chains passing under its upper and centre pulleys, respectively, and over guide-pulleys in the frame, to brake-shafts on the car, and to the shaft of a tiller-wheel, placed on the forward car of the train, in such manner, that when the block is raised or lowered by either of the ropes last stated, the brakes will be applied or released; and this operation performed upon one or more cars independently of each other, or all the cars of a train simultaneously, at pleasure, as hereinafter more fully set forth.

By my improvements, the brake-shoes are applied to both sides of the truck-wheels, and the pulley is substituted for the lever in the application of the power, thereby removing the objections which have heretofore prevailed against the application of all the brakes of a train simultaneously, it having been found that, ordinarily, the brakes of the rear cars will not free themselves, and the jar and rattle of the levers beneath the cars are a constant source of annoyance to travellers.

In the accompanying drawing, which shows a convenient arrangement of parts for carrying out the object of my invention—

A represents the car on which the tiller-wheel, for operating the brakes of the entire train, is placed, and which, for passenger-trains, would be the baggage-car, as being the forward car.

B represents any other car of the train.

A movable block, E, containing three sheaves or

grooved pulleys, $e^1 e^2$, is placed in a frame, D, beneath the centre of the car.

A wire rope or chain, F, passes under the upper pulley e^2 , and over fixed guide-pulleys d^1 , on the frame D, being secured, at its ends, to brake-shafts F', provided with hand-wheels or cranks f , and located at the ends of the car.

By rotating the brake-shafts, the block E will be raised or lowered, according to the direction in which they are turned.

A tiller-wheel, G², is mounted upon a horizontal shaft, G¹, in the baggage-car or forward car of the train.

A rope or chain, G, is secured to the shaft G¹, and passes under a guide-pulley, g , on the frame D; thence over another guide-pulley, d , under the second pulley e^1 , of the block E, and over a third guide-pulley, d^3 . Thence it is continued to the next car, and passes over guide-pulleys $d^2 d^3$, and under the central pulley e^1 of the block E of that car, in a similar manner, and so on through the whole train, its end being secured to the rear of the last car.

It will be readily seen, that by suitable rotation of the tiller-wheel G², which is provided with a pawl, g^2 , and ratchet g^1 , to prevent it from turning backward until it is desired to release the brakes, the blocks E of all the cars in the train can be simultaneously raised or lowered.

A rope or chain, H, passes over the lowest pulley e of the block E, and under guide-pulleys d^2 on the frame D. Extending thence toward the end of the car, it passes around pulleys J², upon movable rods J, beneath the trucks C, which pulleys reverse its direction; thence around pulleys i , on the outer brake-beams I, toward the centre of the car, by which its direction is again reversed, and is finally secured at each end of the inner brake-beams I' of the truck-wheels which are nearest the centre of the car.

Chains or ropes J¹ are attached to the opposite ends of the rods J, and, passing around pulleys i^3 , on the outer brake-beams of the truck-wheels nearest the ends of the car, are secured to the inner brake-beams of the same.

The brake-beams are hung to the truck-frames by links or straps i^2 , and carry brake-shoes i^1 of the ordinary construction.

From this arrangement, it will be observed, that when the blocks E are raised by either of the ropes F G, the rope H and its connections J J¹ will apply the brake-shoes to each side of every wheel of the car.

By the application of hand or other power to the tiller-wheel G², the blocks E of all the cars will be simultaneously raised, by means of the rope or chain G, thus enabling the brakes to be applied to the whole train without loss of time, and causing the speed of

the same to be rapidly checked, thus affording protection against collisions and runs off, and the loss of life and damage occasioned thereby.

In case of breakage of the rope G, the brakes can be applied independently by means of ropes F; or the latter method may be employed, if desired, without interfering with the proper working-position of the rope G, which rope, it should be stated, may be either in one piece for the entire train, or in separate sections on each car, united by proper connections.

Having thus fully described my invention,

What I claim therein as new, and desire to secure by Letters Patent, is—

1. The tiller-wheel G², in combination with the rope or chain G, guide-pulleys *g d d*³, and movable blocks E, the whole constructed and operating substantially as described, for the purpose of simultaneously applying and releasing the brakes of a railroad-train, as set forth.

2. The brake-shafts F' and ropes or chains F, in combination with the guide-pulleys *d*¹, blocks E, and pulleys *e*^{2 e}, substantially as described, and for the purpose of operating the brakes of each car separately, as set forth.

3. The rope or chain H, rods J, and ropes or chains J¹, in combination with the pulley *e*, guide-pulleys *d*², pulleys J^{2 i i}³, and brake-beams I I', the whole constructed and operating substantially as described, for the purpose of applying the brakes to both sides of the truck-wheels, as set forth.

In testimony that I claim the foregoing invention, I have hereunto set my hand, this 12th day of December, 1868.

J. B. VAN DYNE.

Witnesses:

GEO. W. MCGILL,
FRANK TRIGG.