

## Car Brake.

Patented Dec. 28, 1869.



**INVENTOR:**

O F Lect  
 Per  
 Munn  
 R  
 a

# United States Patent Office.

BENJAMIN F. LEET, OF DAYTON, NEVADA.

Letters Patent No. 98,277, dated December 28, 1869.

## IMPROVEMENT IN BRAKES FOR CARRIAGES.

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, BENJAMIN F. LEET, of Dayton, in the county of Lyon, and State of Nevada, have invented a new and improved Brake for Vehicles and Machinery; 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.

This invention relates to new and useful improvements in brakes for car, wagon, and other revolving wheels.

The invention comprises a mode of suspending and operating the brake-shoes, or the arms on which they swing, by knuckle-jointed links, to the middle joint of which a sliding bar is attached, and operated either by a toothed pinion and hand-shaft, or by an oscillating shaft, hand-lever and eccentrics, for imparting the reciprocating motion for working the said knuckle-jointed links. The said links, as also the jointed arms by which the brake-shoes are suspended, are arranged for adjustment, for varying the position of the shoes relatively to the periphery of the wheel.

Figure 1 represents a longitudinal sectional elevation of a truck with my improved brake-apparatus attached, the sliding bar for operating the knuckle-jointed links being arranged for operation by a toothed wheel and hand-shaft.

Figure 2 represents a plan of the bottom of the same.

Figure 3 represents a longitudinal sectional elevation of a car, showing the application of the same, the sliding bar being arranged for operation by an oscillating shaft and hand-lever, and eccentrics.

Figure 4 represents a partial cross-section of fig. 2.

Similar letters of reference indicate corresponding parts.

A is the brake-shoe, suspended on the shaft B, traversing the vehicle, so as to support a shoe for each of the opposite wheels, and mounted on the swinging ends of the arms C, jointed to any fixed support above the horizontal plane of the axle of the wheels, as at D, so that in swinging downward, the paths of the shoes will cross the rims of the wheels, whereby, when they come together, they will lock, by the action of the frictional contact of the wheel with the shoe, and the gravity of the latter, in a way to suddenly arrest the motion of the wheels, without the application of any other force.

The shaft B, in the case of the application to vehicles, and the shoe, when applied singly to other wheels, must be suspended from above, by some means for letting the shoes down into contact with the wheels, and for raising them again, when they are not required to be in action.

The means which I have adopted consists of a pair of knuckle-jointed links, E F, with a sliding bar, G, connected to the central joint for moving into a vertical line, for lowering the shoes, and for drawing them out of the vertical line for raising the same.

The link F is connected to the adjustable bolt H, passing up through the platform, and having adjusting-nuts above and below.

The arms C are connected to similar adjusting-bolts, passing through the supports O.

In the application to vehicles, I use two sliding bars G, one to each set of knuckle-joints, and so shape them, when operated by a pinion and hand-shaft, that the ends acted on by the pinion are brought nearly together, as represented in fig. 2, and joined by bolts I.

K represent gear-teeth, placed on one of the said bars.

L is the pinion, gearing with the same, and mounted on a vertical hand-shaft, M, with a hand-wheel on the top.

The shaft M is provided with a ratchet-wheel, N, in which a pawl, O, fixed to the car-body, works to hold the shoes out of action.

In some cases, I propose to actuate these bars G by eccentrics P, on an oscillating shaft, Q, provided with a hand-lever, R, which lever may have curved, slotted, and notched guards S, into the notches of which the lever may spring at the end of each movement, being thereby held to maintain the brakes either in or out of action, and an eccentric roller, T, may be provided for pressing the spring-lever out of the notches. Or the lever may be arranged to be pressed into and maintained in the notches by the eccentric, and to spring out of them, when the roller is turned away.

The position of the brake-shoes is intended to be so that they will bear fully on the wheels, when the knuckle-links stand in the vertical line, and I propose to so arrange the sliding bars G, figs. 1 and 2, that when thus standing in the vertical line, the bolt I, at the ends thereof, will strike against the pinion, and arrest the further movement in that direction. The eccentrics will also be adjusted so as to move the knuckle-jointed links only to the vertical line.

It is designed that the parts shall be so adjusted, that when the pawl Q is disconnected from the ratchet-wheel, or the lever from the notch in the guard S, whereby the brake is held out of action, the shoes will instantly and self-actingly engage the wheels, and arrest the motion.

In the application to railroad-cars, the brakeman or engineer, having the hand-wheel and shaft or lever R within reach, will be able to stop the wheels at once, or he may graduate the force of the pressure on the

wheels with great exactness; for if bars G be restrained from going back, the full action on the wheels will be prevented.

I propose, in some cases, to extend the bars G along the bottom of the cars to the buffers, and projecting therefrom, so that when the cars come together, the said bars will be moved back, to set the brakes in operation. This may be done in connection with the hand-shaft and pinion, the pawl being kept out of action with the ratchet-wheel N.

Having thus described my invention,

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

1. The combination, with the brake-shoe, suspended as described, of the knuckle-jointed links, and actuating-bars connected thereto, and provided with means for operating them, substantially as specified.

2. The combination, with the brake-shoes and knuckle-jointed links, of the operating-bars G, when arranged for operation either by the pinion and hand-shaft, or the oscillating shaft, eccentrics, and hand-lever, all substantially as specified.

3. The combination of the jointed suspending-arms C, brake-shoes, and knuckle-jointed links, when the said links and arms are arranged for adjustment, substantially as specified.

The above specification of my invention signed by me, this 16th day of September, 1869.

B. F. LEET.

Witnesses:

GEO. W. MABEE,  
ALEX. F. ROBERTS.