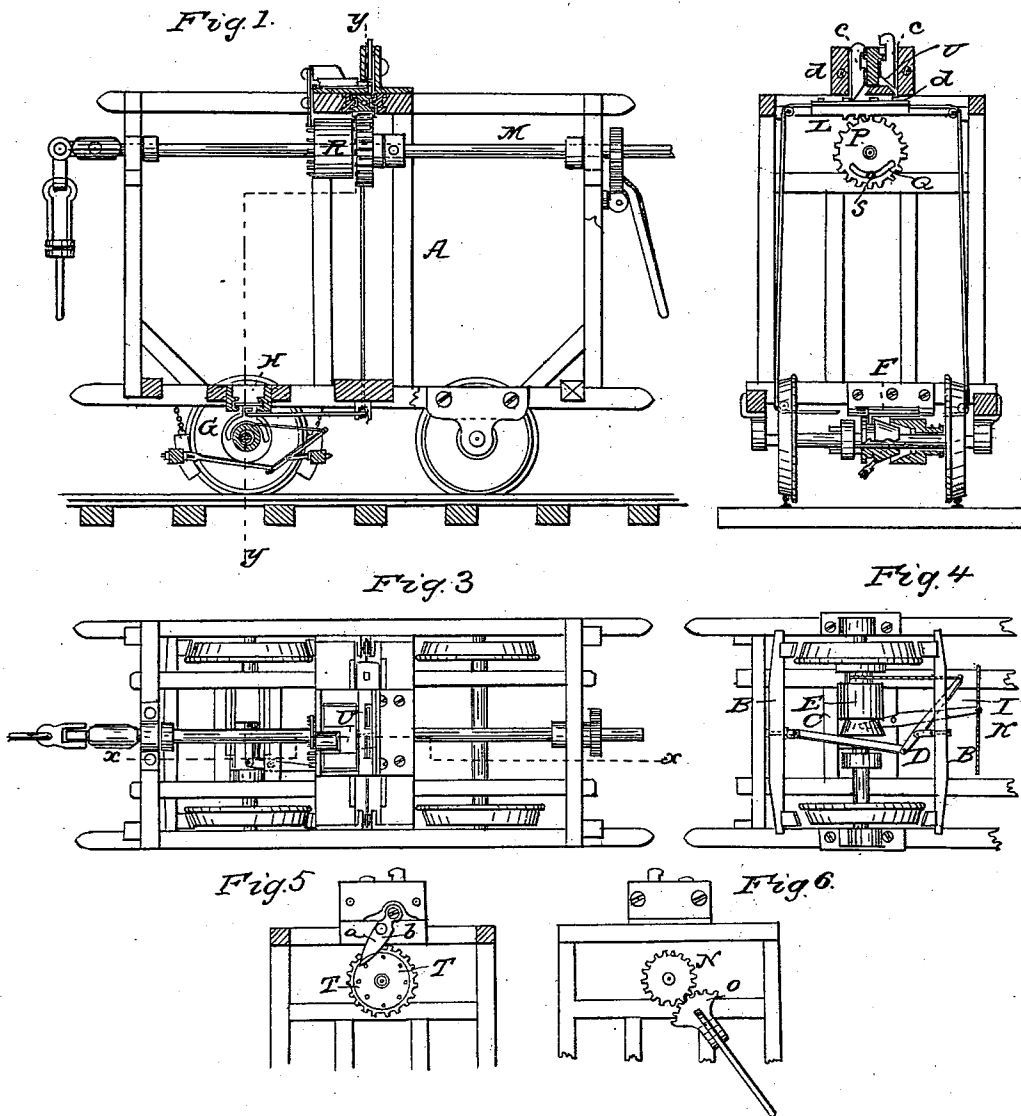


G. N. JONES.

Car Brake.

No. 82,324.

Patented Sept. 22, 1868.



Witnesses  
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# United States Patent Office.

GEORGE NEWTON JONES, OF OSHKOSH, WISCONSIN.

*Letters Patent No. 82,324, dated September 22, 1868.*

## IMPROVED 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, GEORGE NEWTON JONES, of Oshkosh, in the county of Winnebago, and State of Wisconsin, have invented a new and useful Improvement in Car-Brakes; 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 drawings, forming a part of this specification, in which—

Figure 1 represents a longitudinal sectional elevation of a car provided with my improvements, taken on the line *x x* of fig. 3.

Figure 2 represents a cross-section on the line *y y* of fig. 1.

Figure 3 represents a plan view.

Figure 4 represents a plan view of the under side of one end of a car, showing the friction-pulleys and the brakes.

Figures 5 and 6 represent detail views.

Similar letters of reference indicate corresponding parts.

The object of this invention is to construct car-brakes that may be actuated by connection with the axles of the cars of a train, whereby the power necessary to operate them may be obtained from that of the moving train.

It consists in the arrangement of friction-pulleys upon one or both of the axles of each car, to which are connected, by cords and levers suitably arranged to press the brakes against the wheels, when the cords are wound up on the said friction-pulleys. The friction-pulleys are set into rotary motion by the action of cords attached to slides at the tops of the cars, which slides are actuated by a line-shaft running from car to car, connected by universal joints between each car, which shaft is turned in either direction by levers and toothed segmental wheels gearing into wheels on the shaft at the ends of each car, the lever being actuated by the brakeman.

Means are provided to admit the shaft to be rotated until all the brakes of a train are brought into action, irrespective of the amount of "lost motion" there may be in the mechanism by which each is actuated from the said operating-shaft, or in the connection of the shaft.

A represents the framing of a railroad-car. B represents brakes suspended in the usual manner, and provided with the levers C and D. The long arm of the lever D is connected by a cord or chain to the loose pulley E, having a conical socket in one end.

F represents a conical sliding pulley connected to the shaft, to rotate with it in the manner shown, or by any other suitable means. It is provided with an annular groove near its base, wherein the crocheted arm G works, which is connected rigidly to the slide H, which is arranged in suitable ways secured to the under side of the framing of the car.

I represents a lever, pivoted to the framing, and connected by its short arm to the said slide. The long arm is provided with cords or chains, K, which stretch in each direction to the sides of the car, when they are carried over pulleys to the toothed slide L, arranged transversely of the car, in suitable ways, at the top of the same.

M represents a line-shaft, provided with suitable universal joints, to connect with the shafts of the other cars of a train, and with toothed pinions, N, at the ends of the cars, whereby it may be rotated by the segmental wheels O, having levers attached thereto, to be actuated by the brakemen. The shaft is provided with a loose toothed wheel, P, having in it a curved slot, Q, and gearing into the toothed slide L, to which the cords K are attached.

R represents a collar, secured to the shaft, adjacent to the toothed wheel P, and provided with a pin, S, which works in the said curved slot. The other end of the said collar is provided with pins, T, arranged at equal distances around the face of the same.

U represents another slide, which is arranged above the slide L, and jointed to the short arm of a lever, *a*,

which is pivoted at *b* to the frame, as shown in fig. 5. The long arm of the said lever is actuated by the pins of the drum *R* in either direction. Above the slides *L* and *U* are arranged two vertically-sliding catches, *C'* *C'*, in suitable guides, having inclined lower ends, which are alternately raised by a double-inclined projection of the slide *U*, and fall back by gravitation when the slide moves away from under them.

The upper face of the slide *L* is provided with studs, *d*, as shown in fig. 2, against which the catches *C* and *C'* take, to hold it when it is moved into the position whereby the cone-pulleys are brought into action, or when it is moved back to the right position to hold them out of action.

The operation is as follows: When it is desired to apply the brakes, the operator, by means of the segmental wheel *O*, operates the shaft *M* in the proper direction, but by reason of the slot in the loose wheel *P*, it will not move until the pin *Q* has traversed so far in the same as to strike the wheel at the end, while the collar *R*, which is fast to the shaft, will be set into motion with it, bringing the pins *P* into contact with the long end of the lever *a*, whereby the slide *U* will be moved in a direction opposite to that in which it is required that the toothed slide *L* shall be moved, whereby it will raise the catch *c* or *c'*, which stands in the way of the studs *d* on the said slide, letting the other catch drop upon the said slide, but which will not obstruct the passage of the slide in that direction, owing to the inclined lower end, which will ride over the studs and catch behind them, preventing it from sliding back until the slide *U* has moved in the opposite direction.

The movement of the slide *L*, as above described, will, through the rods or chains *K*, move the lever *I*, so as to bring the sliding cone into frictional contact with the loose pulley *E*, whereby the cord is wound up, so as to bring the brakes to bear on the wheels, as will be readily understood. When the brakes bear on the wheels with sufficient resistance to overcome that of the friction-pulleys, the pulley *E* will slip, and the cord or chain on the lever *D* will wind no further.

As there will be considerable lost motion in the connections of the shaft *M*, in order to operate all the brakes of a train from one point, it will be necessary to continue the rotation of the shaft after some of the brakes have been brought into action, for this reason: the slides *L* are provided with only enough teeth to be moved far enough to bring the brakes into action, when they will pass out of gear with the wheels *P*, and allow the latter to rotate sufficiently to allow all the brakes to be brought into action.

When the brakes are required to be thrown out of action, the shaft is turned in the other direction, whereby the slide *C*, which holds against the stops *d*, on the top of the said slide, to maintain it in the position it has occupied, is raised out of contact with the said stop by the slide *U*, and the slide *L* is returned to its normal position.

It will be seen that by this arrangement all the brakes of a train may be brought into action by one brakesman, the power required to be executed by him being only enough to bring the cone-pulleys into contact. Also, that by continuing the shaft to the reach of the engineer, the brakes may be placed within his control.

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

1. The combination, with the friction-pulleys, of the shaft *P*, connected from car to car, as described, and slides *L*, connected to the sliding pulleys by a cord and lever, for actuating them, substantially as and for the purpose described.

2. The combination of the slides *L*, actuating-shaft, and means for allowing the slides to pass out of action, with the shafts, when the brakes are brought into action, substantially as and for the purpose described.

3. The combination, with the slide *L*, of the collar *P*, lever *a*, slide *U*, and catches *C* and *C'*, substantially as and for the purpose described.

GEORGE NEWTON JONES.

Witnesses:

JAS. L. CLARK,

D. REAS.