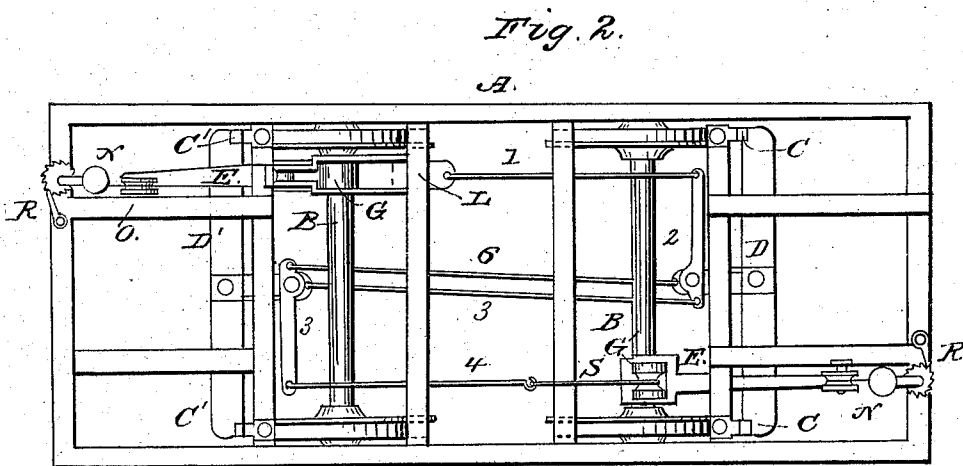
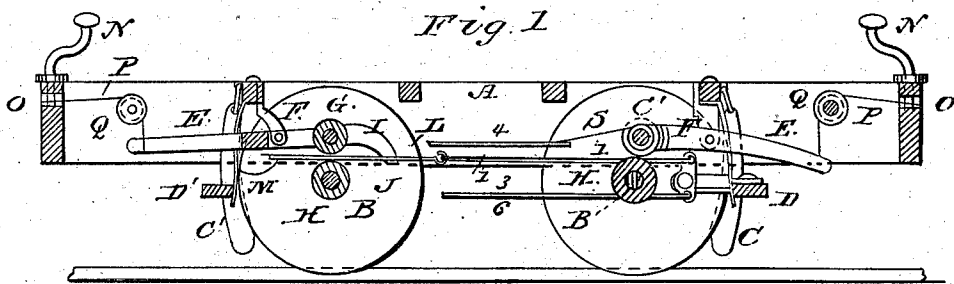


J. STEGER.

Car Brake.

No. 83,418.

Patented Oct. 27, 1868.



Witnesses

J. B. Faller
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United States Patent Office.

JOSEPH STEGER, OF NEW YORK, N. Y.

Letters Patent No. 83,418, dated October 27, 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, JOSEPH STEGER, of the city of New York, in the county and State of New York, have invented a new and useful Improvement in Railroad-Car Brakes, which is also applicable to other vehicles; and I do hereby declare the following to be a full, clear, and exact description thereof, enabling those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which drawing—

Figure 1 is a longitudinal section of the frame and running gear of a railroad-car, to which my invention is applied.

Figure 2 is a plan view thereof.

By means of this invention the momentum of a car is employed to operate the brakes, under a novel construction and arrangement of devices, whereby the rotation of the axles of the wheels is caused to do the work, the only office which devolves upon the conductor or brakeman being to make the necessary changes of position of certain parts of the apparatus, so that the same will be put in contact, or out of contact, with the axle or axles.

The letter A designates the frame of a street-railroad-car, and B B, the axles of its wheels. C C and C' C' are brakes connected to each other by the frames D D', respectively, and applied in pairs to the two sets of wheels here shown.

The letter E designates a lever, one at each end of the car, suspended from the frame A, and vibrating on a stud, F, the longer end of each lever E being presented toward the adjacent end of the car, and its shorter end extending over the adjacent axle. Each end of the car is provided with means for operating the brakes, and the parts are so connected and arranged that both pairs of brakes, C C', are operated from either end of the car, and therefore a description of the apparatus at one end of the car, and which operates in conjunction with one axle, B, will serve for a description of the like parts at the other end, except that the lever E, which is shown at the right-hand end of the car, is a modification of the lever E at the other end in this respect, to wit, that the roller, at its shorter end, constitutes a pulley, and is applied directly to the axle, without the interposition of a movable bar, as at the left-hand end.

I will first describe the apparatus, as shown at the left-hand end of the car, where the shorter end of the lever E carries a roller, G, whose position is directly over a pulley, H, fast on the axle B, a bar, L, being interposed between them in such a manner that it always rests upon said pulley, H, of the axle, or on the axle when such pulley is dispensed with. The shorter end of lever E is bifurcated, so as to receive between its divisions or forks the roller G, and such divisions are bent downwards, as shown in the drawing, and its ends connected by a cross-bar, J, (see fig. 1,) which bar, J, forms a shelf that supports the inner end of the movable bar L at the level or height of the axle, so

that it is always ready for operation. The bar L is made so long as not to be liable, in the operations of the apparatus, to pass the axle in either direction, but so as always to lie thereon. The inner end of the movable bar L is connected, by a rod, 1, to the larger end of a horizontal lever, 2, which is pivoted to the frame D of the brakes C' C', which frame D is connected to the frame D' of brakes C C', by a rod, 3, that goes from the shorter end of said lever 2 directly to the said frame D'. The apparatus which is placed and operated at the right-hand end of the car, is in like manner connected to the frames D D' of the two pairs of brakes, by means of the rods 4 and 6, and of the horizontal lever 5, which is pivoted on the brake-frame D'. The said lever E, at the left-hand end of the car, is operated by the brakeman or conductor, from the platform, through the crank N, crank-shaft O, band P, and pulley Q, one end of said band being fast to the longer end of lever E, and the other end of said band being secured to crank-shaft O.

The operation is as follows: The crank N being rotated, the band P is wound on the shaft O, and the longer end of lever E is lifted towards pulley Q, and its shorter end is depressed so as to bring its roller G down upon the movable bar L, which is more or less pinched, according to the power applied to crank N, between said roller G and the axle B, or its pulley H. The friction thereby produced between the bar L and the axle, causes the said bar to be moved in the direction of rotation of the wheel, and the lever 2 will be consequently vibrated, and, by means of rods 1 and 3, both sets of brakes, C C', will be operated. The left end of the movable friction-bar L is connected by a cord or chain, M, to the lever B, or to any other convenient part of the apparatus, so as to prevent it from being drawn away past the axle by the action of the brakes when they swing away from the wheels.

The brakes C C' are suspended from the frame A of the car, as shown in the drawing, in such a manner as that when they are idle, they will swing away from the wheels. The levers E, at both ends of the car, are so made and arranged that their longer ends are heavier than their other ends, whereby, whenever the band P is released, the said levers E will vibrate on their points of suspension, and their shorter or inner ends will be lifted away from the axle, and all pressure will be removed from bar L, and said bar will then be drawn backwards to its normal position by the action of the brakes in swinging back to their places.

In this description of the operation of the lever E, and its appurtenances at the left-hand end of the car, it is understood that the motion of the car is towards the left. A lever, E, and movable bar, L, of like construction, and arranged in like manner, are provided over the axle, at the other end of the car, in order to operate the brakes while the car is moving towards the right. The apparatus is backed by means of a pawl and ratchet, R, applied to the crank-shaft O in the usual manner.

I have in this same drawing shown a modification of my invention, whereby I can, by means of lever E, operate the brakes from either end of a car, whether it is moving towards the right or left. This modification is shown at the right-hand end of the car, and consists in forming a groove or pulley on the roller G', which is provided at the inner end of lever E. The movable bar L is dispensed with, and roller G' is brought in direct contact with the axle, or with the collar or pulley H formed thereon, so as to be rotated by frictional contact therewith, when the lever E is vibrated in the proper direction. A band or chain, S, is attached to the pulley or groove of roller G' in such a manner that said cord can be wound thereon in either direction, and the other end of said band or chain is attached to the adjacent end of rod 4, which connects with the longer end of the horizontal lever 5 of the brake-frame D', the shorter end of said lever 5 being connected by rod 6 to the brake-frame D. It is evident, from this construction and arrangement, that roller G' will be revolved, whenever it is pressed against the axle, no matter in which direction the car is moving, and that the winding up of band or chain

S on the roller or pulley G', will operate both sets of brakes.

The rapidity and force with which the brakes are actuated depend upon the power applied to the lever E, and when a car is to be stopped gradually, the power applied is graduated so as to allow the friction-bar, or plate L, or the roller G', to slip on the axle. The enlargement H on the axles is only to produce a quicker action on the brakes, and its diameter can be changed to suit the maker, or the axle can be left of its natural size, or can be reduced at the place where the levers are applied, if desired.

My invention can be applied to any other kind of vehicle.

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

The combination of the roller G, lever E, friction-bar or plate L, and axle B, substantially as described, for actuating the brakes of a car.

JOSEPH STEGER.

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.