

(No Model.)

2 Sheets—Sheet 1.

J. LESSARD.
BRAKE FOR STREET RAILWAY CARS.

No. 578,646.

Patented Mar. 9, 1897.

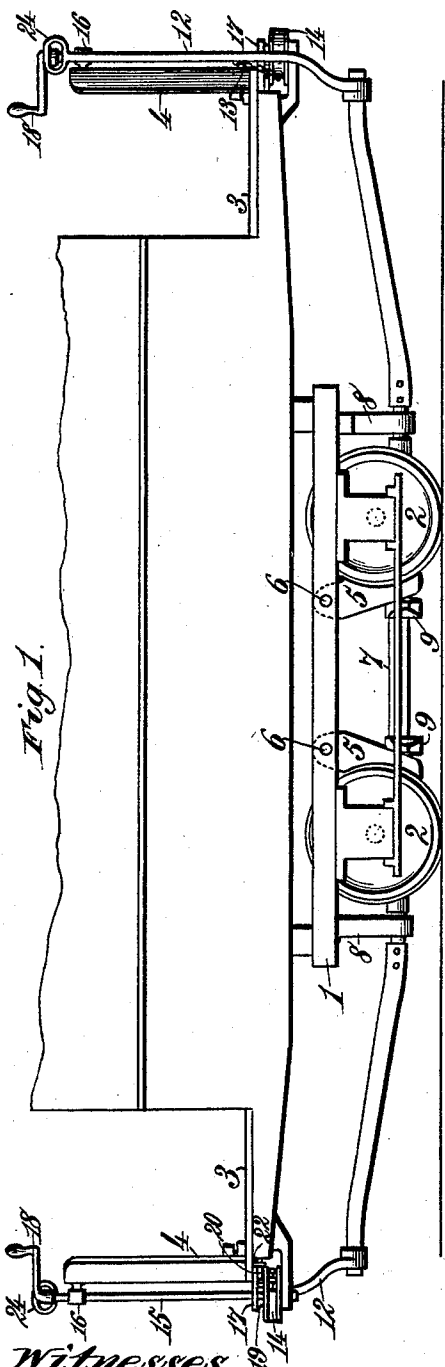


Fig. 1.

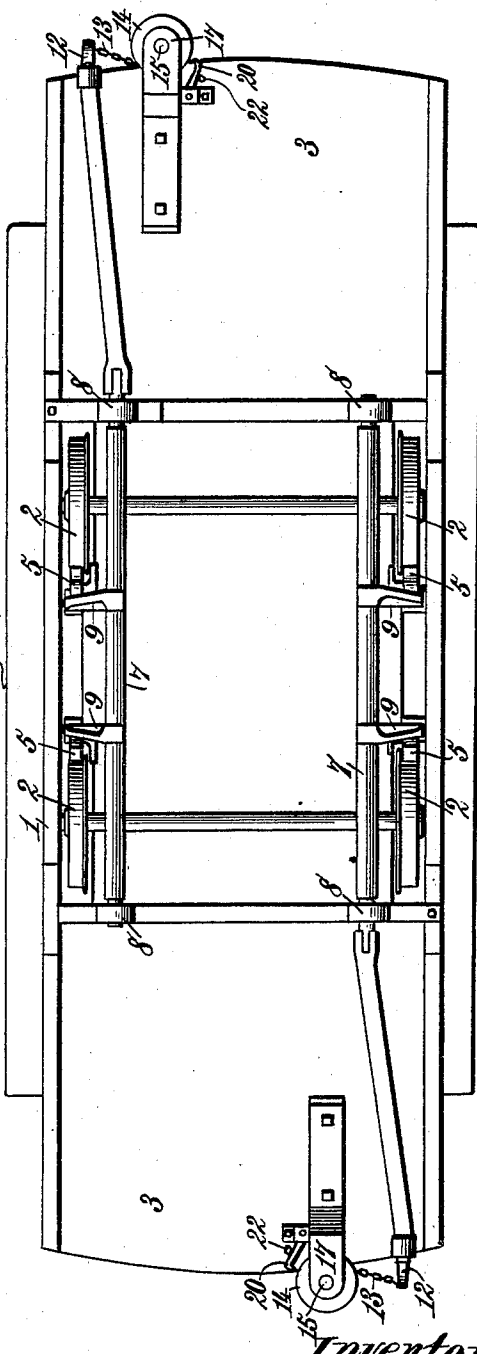


Fig. 2.

Witnesses:
Robert Smith
Thos. A. Ginn

Inventor:
Jeremie Lessard.
By *James L. Norris.*
Atty.

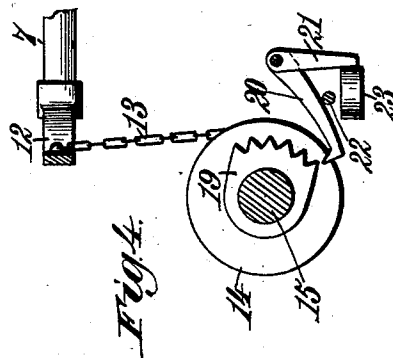
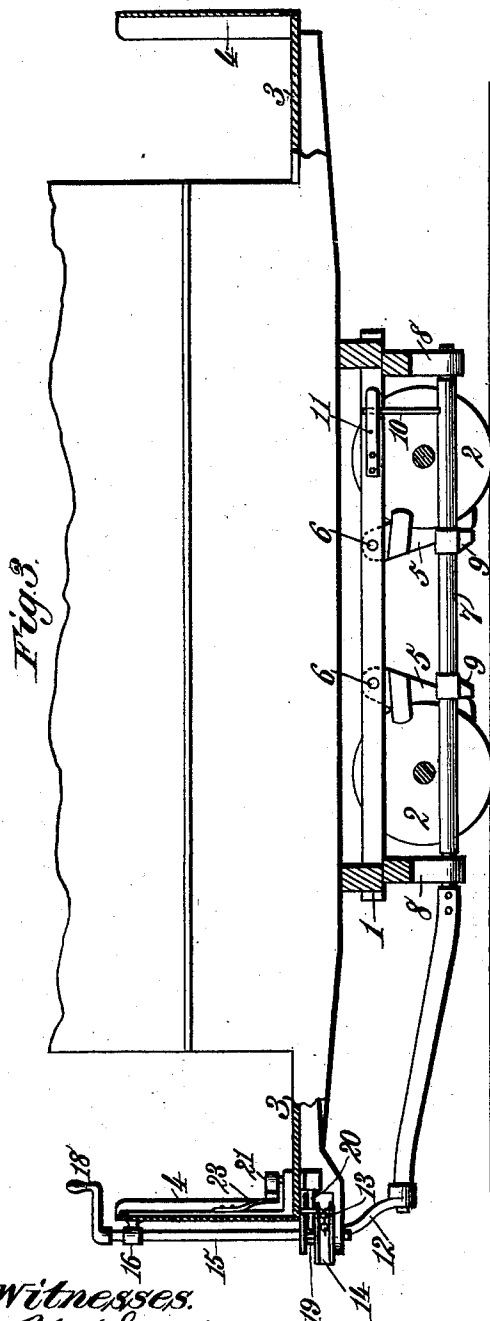
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UNITED STATES PATENT OFFICE.

JEREMIE LESSARD, OF COHOES, NEW YORK.

BRAKE FOR STREET-RAILWAY CARS.

SPECIFICATION forming part of Letters Patent No. 578,646, dated March 9, 1897.

Application filed June 2, 1896. Serial No. 594,003. (No model.)

To all whom it may concern:

Be it known that I, JEREMIE LESSARD, a citizen of the United States, residing at Cohoes, in the county of Albany and State of New York, have invented new and useful Improvements in Brakes for Street-Railway Cars, of which the following is a specification.

This invention relates to brakes for street-railway cars; and it consists in features of construction and novel combination of devices in a car-brake, as hereinafter more particularly described and claimed.

In the annexed drawings, illustrating the invention, Figure 1 is a side elevation of a portion of a street-car provided with my improved brake mechanism. Fig. 2 is a bottom plan of the same. Fig. 3 is a vertical longitudinal section of the same. Fig. 4 is a detail plan of the pawl-and-ratchet mechanism and connections removed from the car.

Referring to the drawings, the numeral 1 designates the wheel-truck, 2 the car-wheels, and 3 the car-platforms, with dashboards 4, as usual.

The brake-shoes 5 are suspended at their upper ends from pivots 6, supported by the truck. There are two brake-shoes on each side of the truck between and adjacent to the car-wheels of each side, and these shoes are so suspended that they are normally held out of contact with the wheels by the force of gravity. Each brake-shoe has one edge shaped to conform to the periphery of a car-wheel, and its opposite edge is somewhat inclined or wedge-shaped, the shoe being thickened toward its upper end.

At the inner side of and close to the car-wheels are rock-shafts 7, each of which is journaled in suitable bearings 8 beneath one side of the car-truck. These parallel rock-shafts 7 are each provided on its outer side with a pair of cam-lugs 9, so constructed and arranged that when a rock-shaft is turned in the proper direction the cam-lugs 9 thereon will be swung upward between and in forcible contact with the beveled or inclined edges of the brake-shoes 5, so as to press the shoes against the car-wheels to arrest or retard their movement. The cam-lugs 9 are each beveled or inclined on the side next to the brake-shoe, so as to have a wedging engage-

ment with the shoe in forcing it against the wheel-periphery.

Each rock-shaft 7 is provided near one end with a vertically-projecting arm 10, against the inner side of which is arranged to bear a spring 11, attached to the inner side of a longitudinal portion of the truck-frame. When either rock-shaft 7 is turned or oscillated to apply the brakes on one side of the car, the rock-shaft arm 10 will force the spring 11 backward, and the instant that the rock-shaft is released the spring 11, acting on said arm 10, will cause the rock-shaft to assume its normal position and permit the brake-shoes 5 to swing away from the car-wheels.

It is obvious that any suitable arrangement of spring may be employed to return the rock-shaft to its normal position when released.

One of the two rock-shafts 7 is extended beneath the forward platform of the car and the other rock-shaft is extended beneath the rear platform. To this extended end of each rock-shaft 7 is secured an upwardly-projecting lever 12, which is connected by a chain 13 to a pulley 14 on the ordinary vertical brake-spindle 15, journaled in bearings 16 and 17, adjacent to the dashboard. The upper end of the spindle 15 is provided with the usual operating-crank 18, and on a lower portion of the spindle is carried a ratchet-wheel 19 for engagement with a pawl 20, that is connected with a foot-lever 21 on the car-platform. A stop 22 may be provided to limit the retractile movement of the pawl 20 under the action of a spring 23, that returns the lever 21 to normal position when the pawl is disengaged from the ratchet-wheel 19 by a slight forward push on the spindle-crank.

It will be observed that the two rock-shafts 7 are entirely independent of each other, and that they are separately operated from the opposite ends of the car. Ordinarily the set of brakes controlled by the car-driver will be sufficient to stop the car, but if occasion requires the other set of brakes may be operated by the conductor from the rear platform.

To apply the brakes, it is only necessary to throw the crank 18 in the proper direction, whereupon the chain 13 by winding on the pulley 14 will draw the lever 12 inward and

thereby turn the connected rock-shaft 7, so as to swing the cam-lugs 9 upward and cause them to force the brake-shoes 5 into blocking engagement with the car-wheels.

5 If it is desired to hold the brake-shoes in contact with the wheels, the foot-lever 21 may be kicked against to force the pawl 20 into engagement with the ratchet-wheel 19 and thereby lock the brakes. By now pushing
10 the crank 18 slightly forward the ratchet-wheel 19 will be disengaged from the pawl 20, and the latter will then be returned by spring 23 to normal position. On thus releasing the chain 13, lever 12, and rock-shaft
15 7 the spring 11 will oscillate the rock-shaft to release the cam-lugs 9 from wedging engagement with the brake-shoes, and the latter, acted on by gravity, will swing away from the car-wheels and leave them in clear running order.

The lever 12 may be extended vertically and provided at its upper end with a handle 24, by which the said lever may be operated for the purpose of applying or releasing the
25 brakes in case the chain 13 should be broken. This is a valuable advantage, as it does not leave the car-operator wholly dependent on the ordinary cranked spindle as a means for controlling the brakes. It is preferable, however,
30 to provide the car with both the lever 12 and spindle 15, as shown. By the operation of either rock-shaft 7 the brakes will be applied to the wheels of one side only, but this will of course block the wheels on both
35 sides of the car, all the wheels being rigid with their axles, as usual.

It will be observed that no brake-beams are employed, all the brake-shoes being separately suspended from the car-truck independent of each other and so pivoted at their
40 upper ends as to normally hang clear of the car-wheels, but in such proximity thereto as to be capable of instantaneous blocking engagement with the wheels when acted on by
45 the cam-lugs carried by the two rock-shafts.

The brakes can be easily and quickly applied and released, and the mechanism comprises only a few parts, all of which are of such simple construction and arrangement
50 that they are not liable to become broken or disarranged.

What I claim as my invention is—

1. In a car-brake, the combination with the brake-shoes pivotally suspended from the car-truck, of a longitudinally-arranged rock-shaft
55 journaled beneath one side of the truck close to the inner sides of the car-wheels and provided with cam-lugs adapted to have a wedging engagement with the said brake-shoes to
60 force them against the wheels, substantially as described.

2. In a car-brake, the combination with the brake-shoes pivotally suspended from the car-truck, of a longitudinally-arranged rock-shaft
65 journaled beneath one side of the truck close to the inner sides of the car-wheels and pro-

vided with outwardly-projecting cam-lugs adapted to have a wedging engagement with the said brake-shoes to force them against
70 the wheels, an operating-lever connected with one end of said rock-shaft, and means for locking the brakes, substantially as described.

3. In a car-brake, the combination with the brake-shoes pivotally suspended from the car-truck, of a rock-shaft journaled longitudinally
75 beneath one side of the truck close to the inner sides of the car-wheels and provided with cam-lugs adapted to have a direct wedging engagement with the said brake-shoes to force them against the wheels, means for locking
80 the brakes and rock-shaft, and a spring for returning the rock-shaft to normal position when released, substantially as described.

4. In a car-brake, the combination with the brake-shoes pivotally suspended from the car-truck, of a rock-shaft journaled longitudinally
85 beneath one side of the truck close to the inner sides of the car-wheels and provided with cam-lugs adapted to have a wedging engagement directly with the said brake-shoes to
90 force them against the wheels, means for operating and locking said rock-shaft, an arm carried by the rock-shaft, and a spring adapted to act on said arm to return the rock-shaft to normal position when released, substan-
95 tially as described.

5. In a car-brake, the combination with the brake-shoes pivotally suspended from the car-truck, of a rock-shaft journaled beneath the truck adjacent to the inner sides of the car-
100 wheels and provided with cam-lugs adapted to have a wedging engagement with the said brake-shoes to force them against the wheels, a lever on one end of said rock-shaft, a cranked spindle provided with a pulley, a chain connect-
105 ing said pulley with the lever on the rock-shaft, pawl-and-ratchet mechanism to lock the spindle, and a foot-lever to control said pawl-and-ratchet mechanism, substantially
110 as described.

6. In a car-brake, the combination with the brake-shoes pivotally suspended from the car-truck on each side, of two longitudinally-arranged rock-shafts journaled beneath oppo-
115 site sides of the truck adjacent to the inner sides of the car-wheels, cam-lugs carried on said rock-shafts and adapted to have direct wedging engagement with the said brake-shoes to force them against the wheels, and means for operating said rock-shafts sepa-
120 rately from opposite ends of the car, substantially as described.

7. In a car-brake, the combination with the brake-shoes pivotally suspended from the car-truck on each side, of two rock-shafts jour-
125 naled beneath the truck adjacent to the inner sides of the car-wheels, one of said rock-shafts being extended beneath the forward platform and the other beneath the rear platform, cam-lugs carried on said rock-shafts and adapted
130 to have wedging engagement with the said brake-shoes to force them against the wheels,

a lever on the extended end of each rock-shaft, a cranked spindle having a pulley connected with said lever by a chain, pawl-and-ratchet locking mechanism, and a spring to
5 return each rock-shaft to normal position when released, substantially as described.

In testimony whereof I have hereunto set

my hand in presence of two subscribing witnesses.

JEREMIE LESSARD.

Witnesses:

C. VAN DER COOK,
LUKE HARRIGAN.