

(No Model.)

M. LEARY.
BRAKE MECHANISM FOR CARS.

No. 460,586.

Patented Oct. 6, 1891.

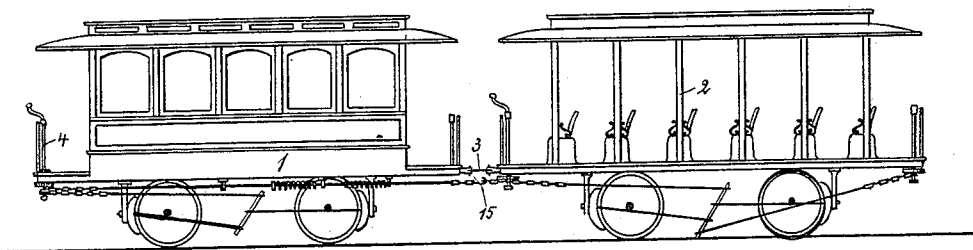


Fig. 1.

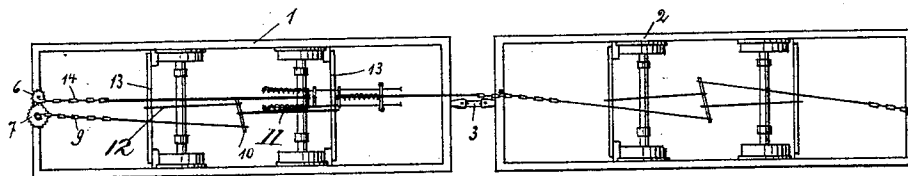


Fig. 2.

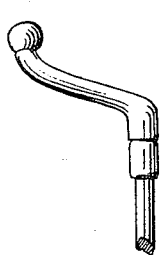


Fig. 3.

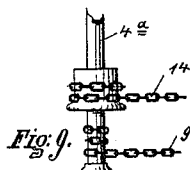


Fig. 4.

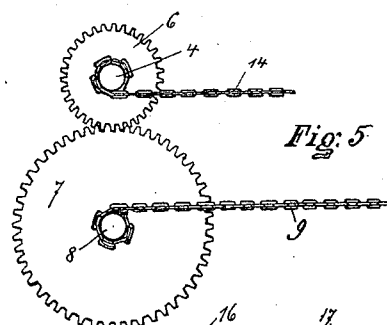


Fig. 5.

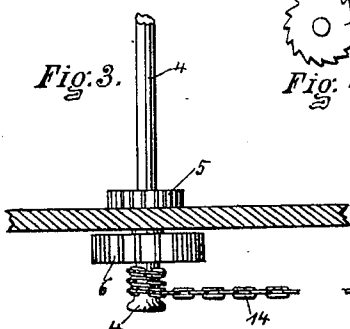


Fig. 6.

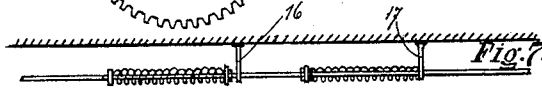


Fig. 7.

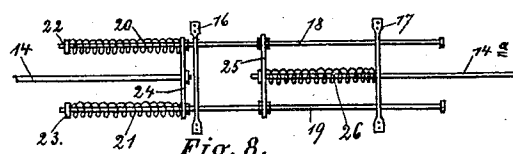


Fig. 8.

WITNESSES.

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BRAKE MECHANISM FOR CARS.

SPECIFICATION forming part of Letters Patent No. 460,586, dated October 6, 1891.

Application filed May 21, 1891. Serial No. 393,568. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL LEARY, of Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Brake Mechanism for Cars; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My invention relates to the brake mechanism for street-cars, and more particularly to a device for setting the brake on a "tag-car" before and in connection with the brake on a motor-car.

In the drawings which accompany and form a part of this specification, and in which detail parts unnecessary to the description are omitted, and in which similar letters and figures of reference refer to corresponding parts in the several figures, Figure 1 shows a side elevation of a motor and tag car. Fig. 2 shows a bottom view of the same. Figs. 3 to 8, inclusive, show details of construction. Fig. 9 shows a modified form of construction.

It is found desirable in street-car service, when tag cars are in use, to apply the brake to the tag-car first, and for this purpose it has been customary to provide a brakeman for the tag-car, in which case the results are not as satisfactory as if the brakes were under the control of or operated by the motor and brakeman at the front of the head car.

Referring to the drawings, 1 indicates the motor-car, and 2 the tag-car, connected to the motor-car by link 3 and pins, in the usual manner. At the front end of the motor-car is provided a vertical brake-shaft 4, provided with a crank-handle in the usual manner. At the platform is provided a ratchet-wheel 5 and engaging-pawl 5^a, and beneath the platform a small cog-gear 6, engaging a larger cog-gear 7, mounted upon a vertical shaft 8, which also preferably extends above the platform to the same height as shaft 4, so that the crank-handle may be used on either. From the lower end of shaft 8 extends a chain or connection 9 to lever 10, from which lever 10 extend connections 11 and 12 to the brake-beams 13,

which brake-beams are provided with shoes bearing upon the wheel in the usual manner. From the lower end of shaft 4 extends a chain or connection 14 under the motor-car, and terminating in a hook 15 at the rear end of the motor-car, to which hook 15 may be connected, by short chain or otherwise, the brake mechanism of the tag-car, which brake mechanism is of any of several well-known kinds. The connection 14 is supported beneath the car by the projecting eye-pieces 16 and 17 on the under side of the car, in which eye-pieces slide a pair of rods 18 and 19, provided with heads to prevent displacement and secure the springs. On one end of each of the rods 18 and 19 are provided spiral springs 20 and 21, which are confined between nuts 22 and 23 on the rods and sliding head-piece 24, to which the rod 15 is attached. The continuation of the rod or connection 14 (indicated by 14^a in Fig. 8) is secured to head-piece 25, which head-piece is also secured to the rods 18 and 19. Between the head 25 and the supporting-piece 17 is provided a spring 26 secured to each.

The operation of the device is substantially as follows: When it is desired to set the brakes, the shaft 4 is rotated by means of the crank-handle to take up the chain 14 and the chain or connection 14, extending through to the brake mechanism of the rear car sets or applies the brake of the rear car. At the same time the chain or connection 9 is taken up by reason of the gears 6 and 7, but at a less rapid rate, the gear 7 being larger than the gear 6, and the brake is thus applied, but not as quick or strong as to the tag-car. Should the brake on the tag-car be set up before the brake on the motor-car is sufficiently strongly applied, the device shown in Figs. 7 and 8 allows the connection to the tag-car to lengthen, in which case the spiral springs 20 and 21 are compressed between head 24 and the nuts 22 and 23. As the connection 14 is moved toward the front end of the motor-car in applying the brake of the tag-car, the bars 18 and 19 slide in the hangers 16 and 17 against the tension-spring 26. When the brake is released, the parts are retraced to their normal position, as shown in Fig. 8, by spring 26.

In Fig. 9 is shown a differential take-up mechanism for the brake connections, which is a modified form of construction for accom-

plishing the same results as are obtained by the devices shown in Fig. 5.

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

- 5 1. In a brake mechanism, the combination of two brake-shafts connected by intermeshing gears of unequal size and connection from each brake-shaft to the brake mechanism of two separate cars, substantially as set forth.
- 10 2. In a brake mechanism for cars, the combination of two brake-shafts connected by intermeshing cog-gears, connections from each shaft to the brake mechanism of the same car and to a tag-car, and a differential lengthening-spring in the brake connection to the tag-car, substantially as set forth.
- 15 3. In a brake mechanism for cars, a differential take-up and brake connections extending from the take-up to the brake mechanism of 20 separate cars, whereby the brake of one car is set in advance of the brake of the other, substantially as set forth.
4. In a brake mechanism for cars, the combination of a differential take-up, brake con-

nections therefrom to the brake mechanism 25 of the same car and to a tag-car, and a differential lengthening-spring in the connection to the tag-car, substantially as set forth.

5. In a brake mechanism for cars, the combination of the brake-shafts 4 and 8, having 30 unequal intermeshing gears, the brake connections 9 and 14 from the shafts 8 and 4 to brake mechanism of the same car and a tag-car, respectively, and the connection lengthening-springs in the connection to the tag-car, 35 substantially as set forth.

6. In a brake mechanism for cars, a positively-acting differential take-up and brake connections extending from the take-up to the brake mechanism of separate cars, substan- 40 tially as set forth.

In witness whereof I have affixed my signature in presence of two witnesses.

MICHAEL LEARY.

Witnesses:

M. E. ROBINSON,
JOHN S. CASEY.