(No Model.)

W. L. & E. A. ANTRIM.

CAR BRAKE.

No. 456,130. Patented July 21, 1891.

Fig. 1.

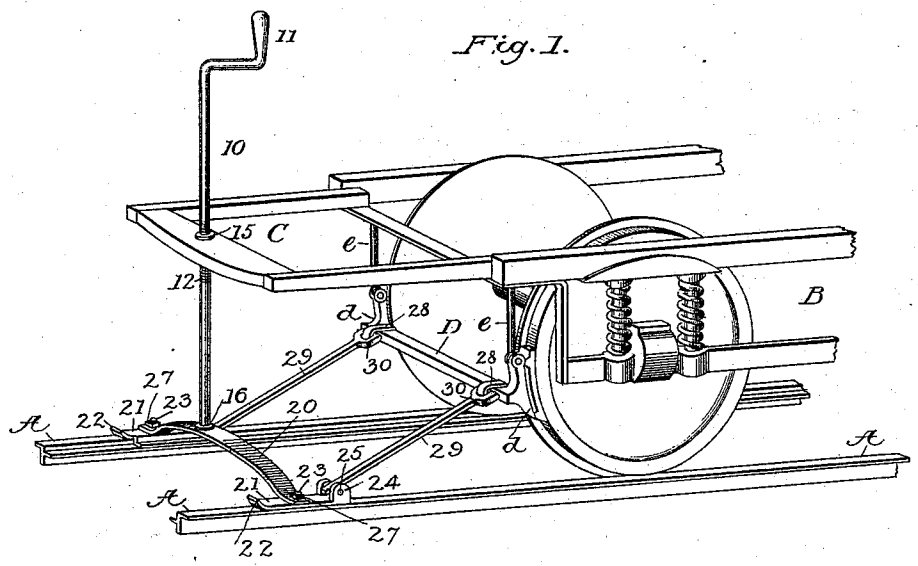


Fig. 6.

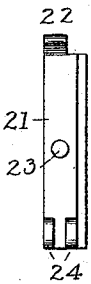


Fig. 5.

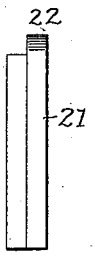


Fig. 3.

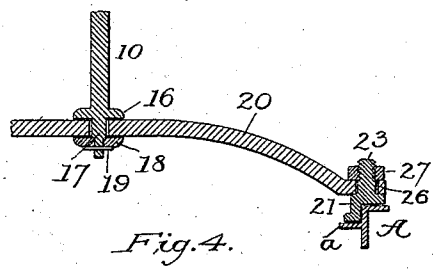


Fig. 2.

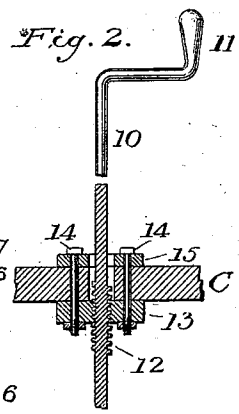


Fig. 4.



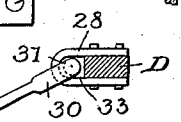
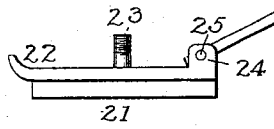


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM L. ANTRIM AND ELIAS A. ANTRIM, OF DAVENPORT, IOWA.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 456,130, dated July 21, 1891.

Application filed March 16, 1891. Serial No. 385,309. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM L. ANTRIM and ELIAS A. ANTRIM, citizens of the United States, residing at Davenport, in the county of Scott and State of Iowa, have invented a new and useful Safety-Brake for Street-Cars, of which the following is a specification.

Our invention relates to improvements in brakes which ordinarily are only used when the car is descending an incline too rapidly; and the objects of our invention are, first, to provide shoes arranged to be placed in frictional contact with the upper surface of the rail and its flange, and, second, to provide means whereby the end of the car may be elevated, so as to take the weight of the car off its end wheels and transfer such weight upon the shoes. We accomplish these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view in perspective of one end of a car-truck with our device attached; and Figs. 2, 3, 4, 5, 6, and 7 are enlarged views of detail parts, in section, of our device, which will be hereinafter fully explained.

Similar letters and figures refer to similar parts throughout the several views.

A represents the rails or track of a street-railway line.

B represents one end of a street-railway-car truck; C, the frame-work for the car-platform; D, a brake-beam; *d d*, the shoe-brakes for the wheels attached to such brake-beam, and *e e* the rods suspending the brake-beam to the car-truck.

Our device is an attachment consisting of two shoes, one forward of each wheel, in line above the rail, connected by a cross-bar, the rear end of each shoe connected with a bar, each of which is extended rearward and hinged to the brake-beam or car-truck, and further consists of a vertical shaft passing through the car-platform, the lower end of which enters the cross-bar in such manner that it can be rotated therein and elevate or depress such cross-bar, a middle portion of such shaft being threaded to register with a threaded nut secured to such car-platform, through which it passes, and the upper end of which shaft is provided with a handle or other means to rotate it.

We will now describe what we deem the best method of carrying out our invention. The vertical shaft 10 is provided at its upper end with a handle 11, and a portion of the middle part of such shaft is threaded, as at 12. Attached to the under side of the forward part of the platform-frame C is a nut 13, secured thereto by the bolts 14 and collar 15, and a registering perforation is made through such frame. This is illustrated by the vertical sectional view shown in Fig. 2. The threaded portion of the shaft is supported in the nut, and by means of such threaded portions the shaft may be raised or lowered by rotating the same. The lower portion of the shaft is provided with a collar 16, integral therewith, a shank 17, upon which is fitted a washer 18, which is held in position by the pin 19, passing through a perforation in such shank, as shown in Fig. 3. A curved cross-bar, its length being about the width of the distance from the outside of one rail to the other, is perforated at about its center to receive the portion of the shaft 10 below the collar 16, and such cross-bar is held in position upon the shaft by the washer 17 and pin 19, as shown in Fig. 3. The shoe 21 is formed upon its under side so as to conform to the upper surface of the rail, if such rail is provided with a flange, as at *a*. Then the under portion of the shoe in cross-section is made to conform to the same, as illustrated in Fig. 3. The front end of the shoe 21 is curved upward slightly, as at 22, to avoid obstacles. In about the center of the upper surface of each shoe is a threaded bolt 23, integral with such shoe, and at the rear end of such shoe, integral therewith, are the parallel ears 24, which ears are perforated horizontally to accommodate a bolt 25. At each end of the cross-bar 20 are vertical perforations 26 for the accommodation of the threaded bolt 23, by means of which and its nut 27 such shoe is secured to said cross-bar, as is fully shown in Fig. 3. A plan view of the bottom of the shoe is shown in Fig. 5, a plan view of the top of the same is shown in Fig. 6, a cross-section of such shoe is shown in Fig. 3, and a side view of such shoe is shown in Fig. 7. A plan view of the top of about one-half of the cross-bar is shown in Fig. 4. A U-shaped strap 28 is bolted to the brake-beam D, near each end of the same, and each of the two bars 29 are at their rear

ends forked, as at 30, the ends of the forks being connected by the cross-bar 31, so that the U-shaped strap may pass between such forks and behind the cross-bar, as shown in Fig. 7, and the forward end of each bar 29 passes between the parallel ears 24 of each shoe, such bars being horizontally perforated to receive the ear-bolts 25, thus securing each of said bars to a shoe 21. It will be observed that the shaft 10 is moved upward and downward in a vertical line, while the cross-bar 20 is moved upward and downward in a curved line, and in order to accommodate these parts to move in unison we elongate the perforation through the cross-bar 20, which receives the end of shaft 10, as 32, (shown in Fig. 4,) and also elongate the space within the U-shaped strap, as at 33, so that the cross-bar 31 may have some play or movement forward and backward therein. This arrangement also permits the use of the brake-shoes *d* against the wheels when our device is not in working position. It will be understood that the shaft 10 is extended to such height so as to bring its handle 11 in convenient position for use by the operative. When not in use, the operative raises the shoes by means of rotating the shaft so that they are held or suspended a few inches above the surface of the rails A, and in using our device he rotates such shaft in an opposite direction, so as to force the shoes on the upper surface of the rails sufficiently to cause frictional contact and, if necessary, to raise that end of the car so that the wheels at that end are elevated above such rails.

It will be understood that our device should be strong. We prefer to construct the shoes and cross-bar of steel and the shaft of either wrought-iron or steel, with threads of sufficient strength to stand all strain without breakage.

From the description given persons skilled in the art will readily understand the construction and operation of our device, and it will also be understood that many modifications and changes may be made therein without departing from the scope of our invention.

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

1. In a safety-brake for street-cars, the combination of the shoes in line above the rail, connected by a cross-bar, each shoe attached at its rear end to a bar, each bar hinged at its opposite end to the brake-bar of the car, the vertical and threaded shaft extending through the car-platform, the threaded nut secured to such platform, through which the threaded portion of such shaft passes, and the lower end of such shaft attached to the cross-bar, whereby the shoes may be forced downward upon the rails or elevated therefrom by rotating such shaft, substantially as described.

2. In a safety-brake for street-cars, the combination of shoes hinged to the car in line above the rail and connected by a cross-bar, together with a vertical screw-threaded shaft passing through the car-platform, arranged to act upon such bar and force said shoes downward upon the rails or to elevate them therefrom, substantially as described.

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