

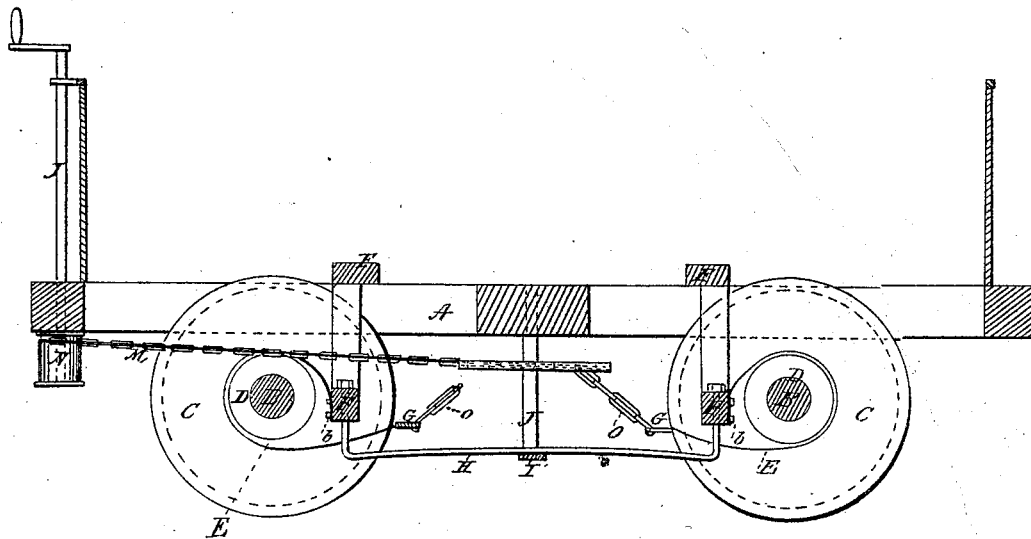
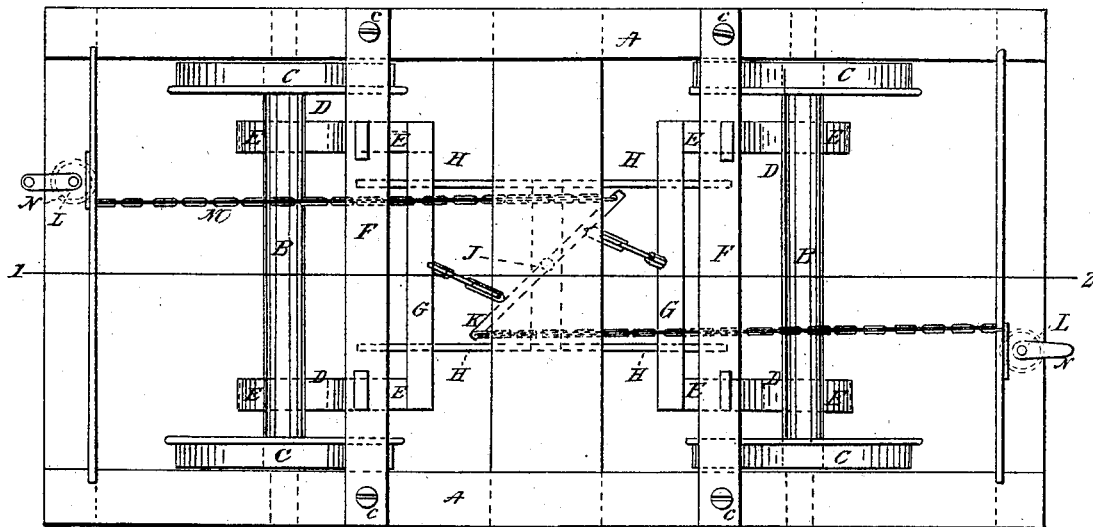
W. WARNER.

Car Brake.

No. 53,365.

Patented Mar. 20, 1866.

Fig. 1.



Witnesses:

Stephen Welch  
David Dickson

Inventor:

W. Warner

# UNITED STATES PATENT OFFICE.

WILLIAM WARNER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF, H. MCILVAIN, J. L. WARNER, AND GEORGE C. SHARP.

## IMPROVED CAR-BRAKE.

Specification forming part of Letters Patent No. 53,365, dated March 20, 1866.

*To all whom it may concern:*

Be it known that I, WILLIAM WARNER, of the city and county Philadelphia, and State of Pennsylvania, 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 of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a plan or top view of a car-truck with the improved brake attached. Fig. 2 is a vertical longitudinal section of the same at the red line 1 2 of Fig. 1.

Like letters in both figures indicate the same parts.

The nature of my invention will be understood by the following description.

A is the truck of an ordinary car. B B are the axles of the wheels C C C C. On said axles I confine the cylinders D D D D, which are encircled by the coil-springs E E E E, the nearest points of the springs being a short distance therefrom, as seen in Fig. 2, when the brake is not applied. The springs are confined at one end, by means of bolts or screws b, to the quadrilateral frames F F, respectively, and at their other end to the pulling-bars G G. The said frames F F are confined to the longitudinal pieces of the truck by means of bolts or screws c, and are sustained at their lower sides by means of the bent rods H H, as represented in Fig. 2. There is confined to said rods a cross-bar, I, which receives the lower end of the swivel-shaft J, which has a cross-rod, K, connected at each end, in the

usual manner, with the crank-shafts L L by means of the chains M M and cylinders N N. To the pulling-bars G G, I connect one end of the chains O O, and the other end of each to the cross-bar K of the shaft J, as represented in both figures.

The operation is as follows: When the brake is not operated the springs E spring off from the cylinders D D, so as to allow a free turning of the latter; but when the wheels C are to be checked one of the crank-shafts L is operated in the usual manner, which gives motion to the rod K, so as to draw the chains O O, and consequently the pulling-bars G G, so as to make the springs E hug the cylinders D and check the forward movement of the car.

Having thus fully described the construction and operation of my improvement in car-brakes, what I claim therein as new, and desire to secure by Letters Patent, is—

1. The use of the coil-springs E, in combination with the axles B, by means of the cylinders D, when arranged and operating substantially in the manner hereinbefore described.

2. Combining the springs E with the frames F and pulling-bars G, substantially as and for the purpose set forth.

In testimony that the above is my invention I have hereunto set my hand and affixed my seal this 28th day of October, 1865.

WM. WARNER. [L. S.]

Witnesses:

STEPHEN USTICK,  
JOHN WHITE.