

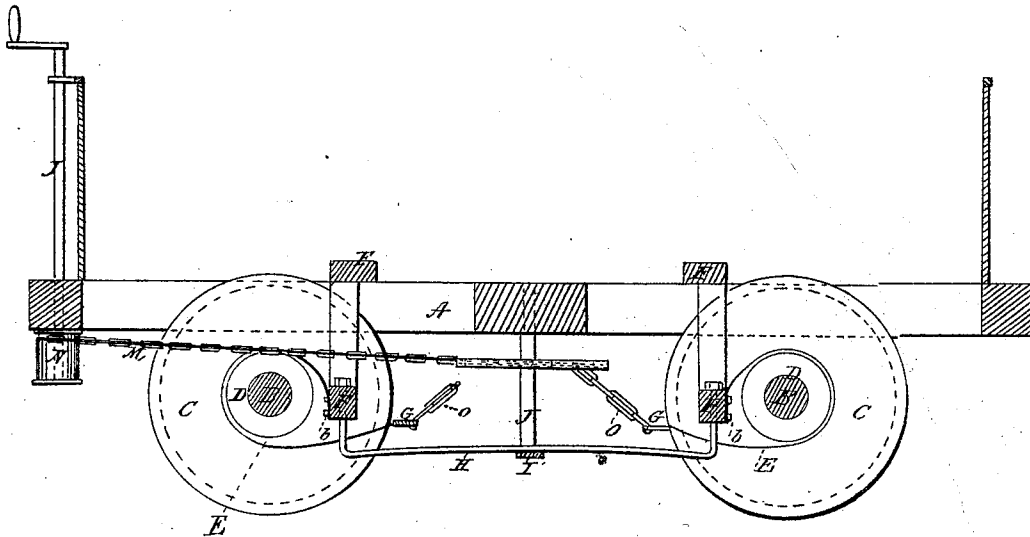
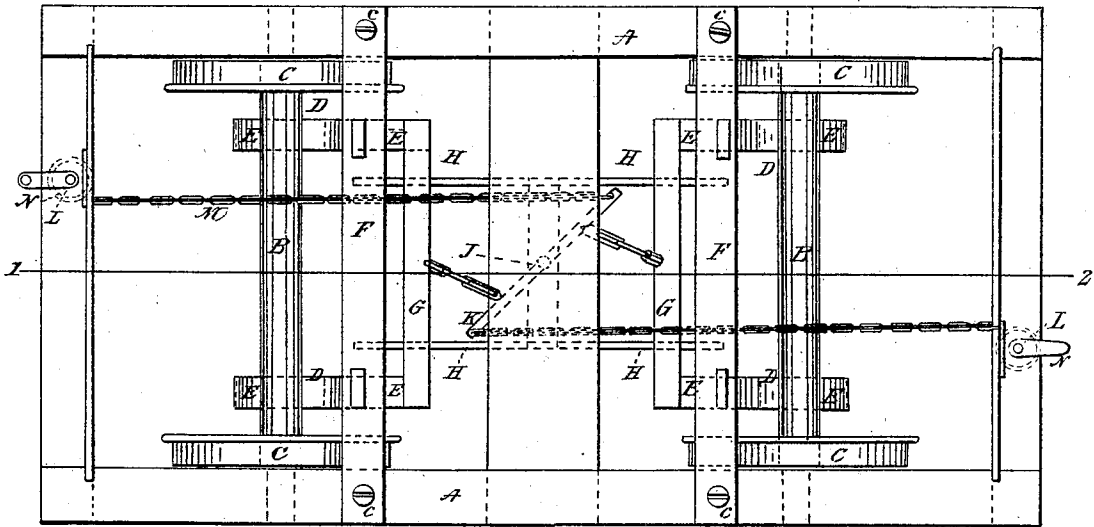
W. WARNER.

Car Brake.

No. 53,365.

Patented Mar. 20, 1866.

Fig. 1.



Witnesses:

Stephen Ustick  
David Dickson

Inventor:

Wm. 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.