

J. TRENT.

Car Pole.

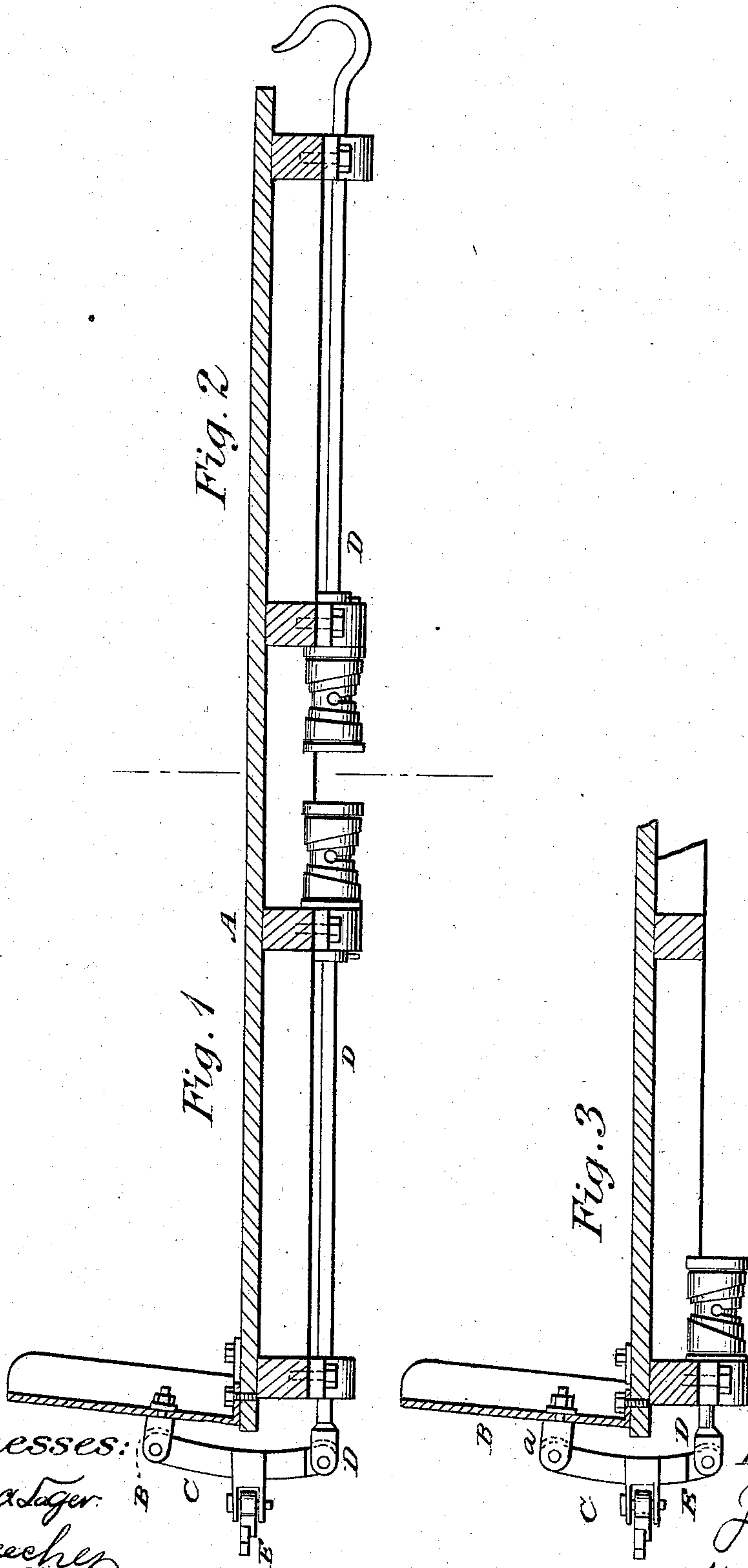
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Fig. 2

Fig. 1

Fig. 3



Witnesses:  
Frederick A. Sager  
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Inventor:  
Joseph Trent  
by  
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# United States Patent Office.

JOSEPH TRENT, OF MILLERTON, NEW YORK.

Letters Patent No. 99,730, dated February 8, 1870.

## IMPROVED DRAUGHT-BAR FOR HORSE-CARS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOSEPH TRENT, of Millerton, in the county of Dutchess, and State of New York, have invented certain new and useful Improvements in Cars for Horse-Railroads, and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

The object of my invention is to relieve the legs of draught-animals of the greater part of the strain consequent in starting a street-car.

To such end, therefore, my invention consists in the combination with the platform of a street-car of a spring and lever, so arranged that the drawing of the lever outward, as in the act of starting a car, will operate the spring, and hence a gradual overcoming of the inertia of the car is effected, thereby greatly relieving the legs and feet of the horses of the excessive strain necessary to start a street-car of the ordinary construction.

In the accompanying drawing—

Figure 1 shows my invention, as applied to a platform horse-car.

Figure 2 shows the ordinary hook, located below the bottom of the car, at the point, vertically, where the draught-power is usually applied.

Figure 3, in red, shows the relieving spring employed in combination with the lever, arranged near the end of the car.

I have illustrated only so much of a car as was necessary to show the application thereto of my invention, A designating the platform, and B the dash-board of a "platform street-car."

C designates a lever, one end of which is pivoted, in any suitable manner, to the dash-board B, or it may be pivoted or jointed to any suitable supporting block upon the end of the platform. I have shown a lug, *a*, which projects from the dash-board, and is provided with a shank, which passes through said dash-board, and is held in place by a nut on its end or otherwise.

To the lower end of this lever a rod D is pivoted, which rod is connected to a spring, in such manner as to effect the compression of the spring when the lower end of said lever is drawn outward, as in the act of starting the car by a draught-animal or animals, such as horses hitched to a whiffletree or whiffletrees, E, bolted or pivoted to said lever.

The style of spring I have shown is a quadruple vo-

lute spring, for which a patent was granted to me on the 7th day of April, 1868, the said spring being so arranged that its forward end will bear against a sill or beam of the car, as shown in figs. 1 and 3, or against any suitable support or block, the rod D passing through said spring, and drawing against the rear or opposite end of the spring, so that, on drawing the rod outward, the said spring will be compressed.

I desire here to remark that I do not limit my invention to any particular style of spring in combination with the lever, as elliptical and many other kinds of springs would answer the purpose.

The devices shown in figs. 1 and 3 are identical, except that the spring in fig. 1 is located near the centre of the body of the car, and in fig. 2, near the end.

Many obvious and important results are obtained by the above-described improvement. The inertia of the car may be readily overcome, and thereby the horses' legs are relieved of the great strain which necessarily occurs in starting a horse-car as at present constructed; the former is a gradual overcoming of the inertia of a body, and the latter the putting of it in motion by a sudden jerk. I am, of course, aware that springs are employed in the buffers of railway-cars, especially to prevent jarring in starting and concussion in stopping. But the new element I add in a horse-car, namely, a lever, to which the draught-animals are attached, is particularly adapted to a horse-car, for the reason that the power is at present applied either below or on a line with the bottom of the car, thereby causing great strain on the horses' legs, by reason of its being so far below the horizontal line of his shoulders; but with the lever-arrangement I have illustrated, the power can be applied at a point more on the plane of a horizontal line drawn from the shoulders of the draught animals, thereby rendering the starting of the car and the hauling of the same exceedingly easier, all of which will be readily understood by reference to figs. 1 and 3.

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

The combination, with the platform of a street-car, of a lever C, rod D, and volute or other suitable spring, substantially as and for the purposes herein specified.

JOSEPH TRENT.

Witnesses:

M. M. LIVINGSTON,  
T. B. BEECHER.