J. STEPHENSON.

CAR-BRAKES.

No. 190,258. Patented May 1, 1877.

Fig. 1.

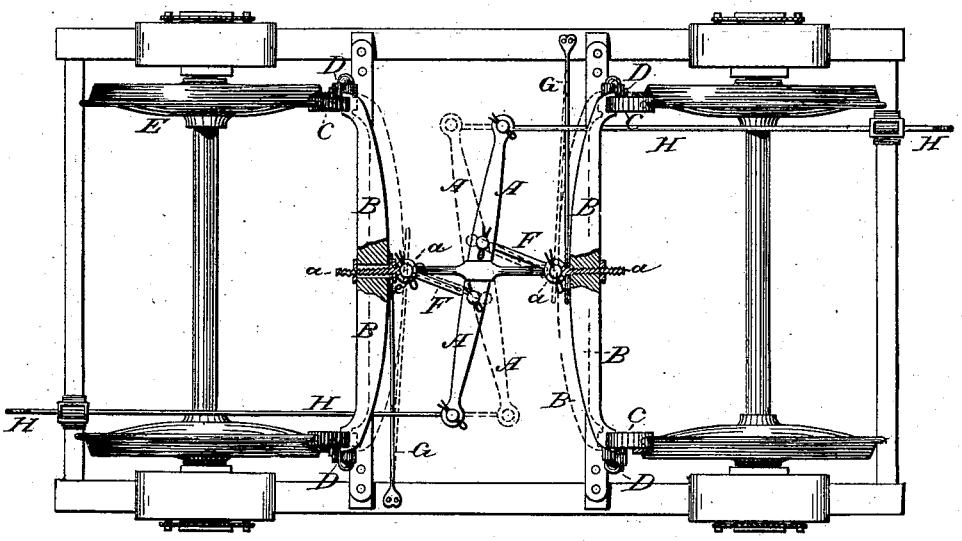
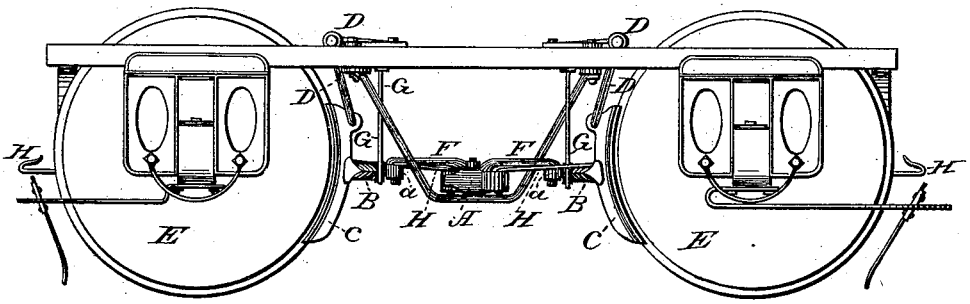


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN STEPHENSON, OF NEW YORK, N. Y.

IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. **190,258**, dated May 1, 1877; application filed October 19, 1876.

To all whom it may concern:

Be it known that I, JOHN STEPHENSON, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Street-Car Brakes; and I do hereby declare that the following is a full, clear, and exact description thereof, 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 letters of reference marked thereon, which form a part of this specification, in which—

Figure 1 represents a plan of the under side of the running-gear of a street-car and body-timbers to which my improvement has been applied, and Fig. 2 a side elevation of the same.

When a street-car is suddenly stopped by the application of the brakes, the front end of the car is drawn downward and the rear end thrust upward, causing the passengers to be unpleasantly thrown forward.

My remedy is to place the brakes between the wheels, so that upon the application of the brakes the tendency will be to thrust upward the forward end of the car and pull downward the back end.

After being somewhat worn, the joints of the brake-work become loose, and permit the clogs to swing sidewise, so that they fail to strike the wheels, thereby rendering the brakes inoperative. This evil is augmented by the diagonal direction of the thrust of the rods which connect the brake-shoes with the lever.

I remedy these evils entirely by the application of a light and flexible stay-rod, chain, or other equivalent device, which I make to run from the car-bottom diagonally downward and connect with the brake-bar, by the use of which the brake-bar is deprived of end motion.

The brake-bar lever A, brake-bars B, clogs C, and hangers D, and chain-rods H may all be of the usual form; but instead of hanging the clogs before the wheels—*i. e.*, at their external sides—they are hung at the inner faces of the wheels, so that the clogs operate between the wheels. This location requires the clogs to be pressed against the wheels by a push motion of the rods F, which connect the lever and brake or clog bars, and not by pull, as is customary.

This push motion requires a different form of connecting-rod F, and different mode of adjustment. The end of the rod F which connects with the lever A is jointed, as usual; and the other end of the same rod has a similar head, making a similar free joint with the eyebolt *a*, which passes through the brake-bar. This eyebolt must be adjustable, either by a nut on the eyebolt at each side of the bar, so that the eyebolt may be moved to or from the connecting-rod, increasing or diminishing the distance between the brake bar and lever, as desired; or the same effect, in a preferable way, may be produced by screwing the eyebolt through the farther side of the brake-bar, with a jam-nut at that side, as illustrated in section lines in Fig. 1.

To prevent each brake-bar from being thrust endwise by the diagonal thrust of its connecting-rod F, the washer-shaped end of a small stay-rod, G, is put on the eyebolt of each, between the jam-nut *e* and the brake-bar, thus forming a washer for the nut, while the other end, which is also provided with a similar washer-shaped end, is firmly bolted to the bottom of the car, substantially as shown in Fig. 1.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the clogs C and their bars B with the actuating horizontal lever A, all being suspended at the inner sides of the car-wheels, and the clog-bars connected with said lever by short connecting-rods F, having free joints at both ends, so that the power may be transmitted by a push motion through the connecting-rods to the clog-bars and clogs, substantially as described.

2. The combination of the lever A with the clog-bars B by connecting-rods F, having free joints at both ends, substantially as described.

3. The combination of the clog-bars and connecting-rods with adjustable eyebolts, substantially as set forth.

4. The combination of the clog-bars with diagonal stays, arranged to connect the clog-

bars with the bottom of the car-body, to deprive the clog-bars of end motion, substantially as described.

5. The combination of the lever A, connecting-rods F, adjustable eyebolts *a*, diagonal stays G, clog-bars B, and clogs C, suspended between the two pairs of wheels of a street-car, the whole forming an efficient system of car-brakes.

6. The combination of the chain-rods H with the lever A, connecting-rods F, adjustable eyebolts *a*, diagonal stays G, clog-bars B, and clogs C, suspended between the two pairs of wheels of a street-car, the whole forming an efficient system of car-brakes.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOHN STEPHENSON.

Witnesses:

WM. J. WALKER,

STUART A. STEPHENSON.