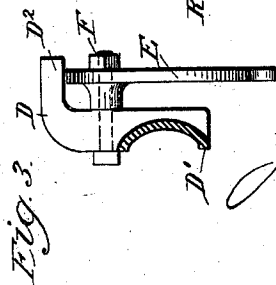
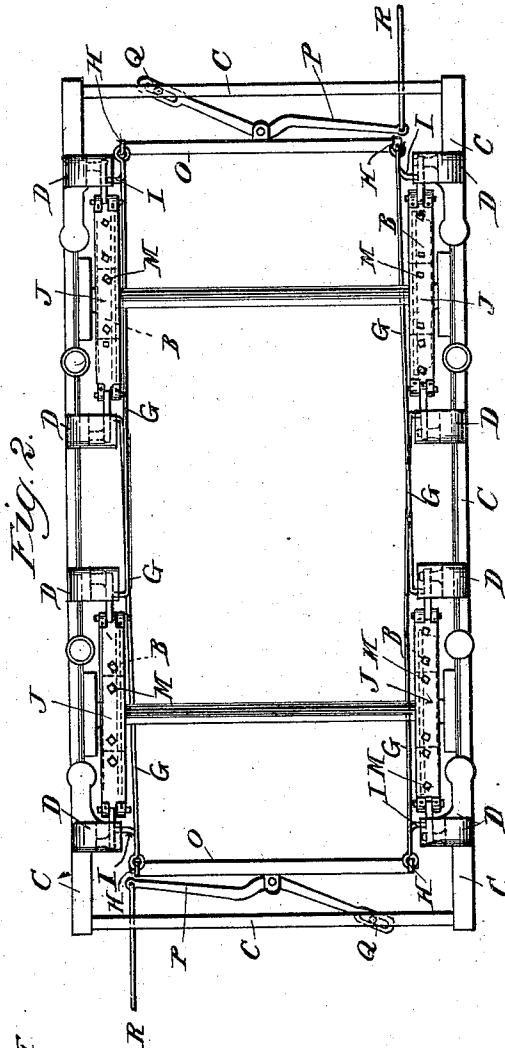
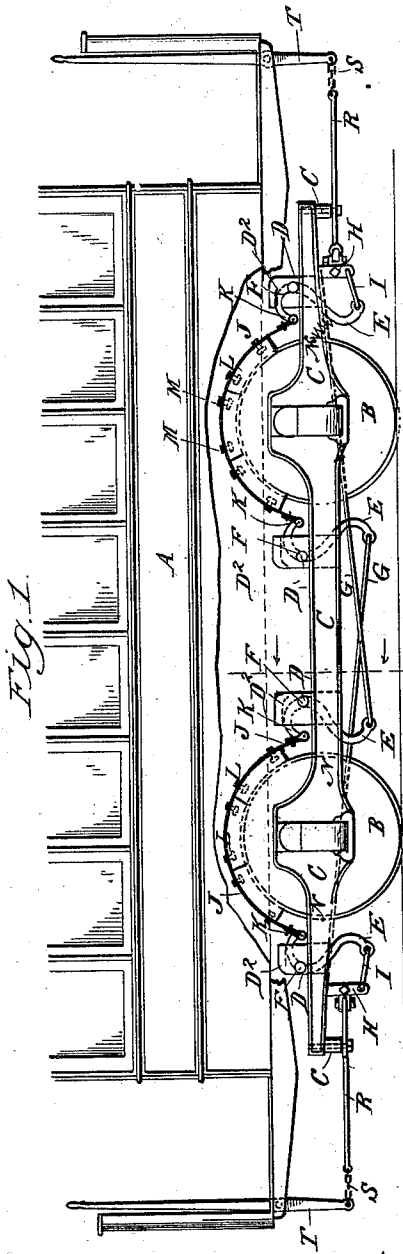


(No Model.)

J. A. WEBBER.
CAR BRAKE.

No. 547,308.

Patented Oct. 1, 1895.



WITNESSES:

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CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 547,308, dated October 1, 1895.

Application filed July 9, 1895. Serial No. 555,376. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH A. WEBBER, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Car-Brake, of which the following is a specification.

My invention relates to improvements in car-brakes especially intended for use on trolley-lines or street-cars, however propelled, but adapted also for use on ordinary railroad rolling-stock; and the invention consists, broadly stated, in so constructing and combining the instrumentalities that the rotation of the wheels is utilized as a means of aiding and increasing the pressure of the brake upon them; also, the brakes are applied simultaneously at both ends of the car—that is to say, both by the driver and conductor—and also the parts are so constructed that brake-shoes adapted to impinge upon the flange of the wheels as well as upon their treads may be used, thus obtaining the largest amount of friction for the power exerted possible.

In the drawings hereof I illustrate the invention as applied to an ordinary street-car, certain unimportant parts being omitted, since they are not at all involved in the invention and simply tend to complicate the drawings. I wish it understood, however, as already stated, that my invention is adapted to all sorts of rail or tram way rolling-stock, in some instances certain modifications being desirable, which need not be explained at length.

Figure 1 illustrates an elevation of the invention, the lower part of the car being partly broken away to disclose the devices more clearly. Fig. 2 illustrates a plan view of a truck, showing the invention. Fig. 3 illustrates a detail of the plates which support the brake devices, showing one of the brake-levers.

A is the car.
B B B B are the wheels.
C is the truck-frame.

D D, &c., are metallic plates which are bolted to the frame of the truck. They have a vertical part D', through which the bolts pass, and a horizontal part or flange D², which overlaps the brake-lever, as shown.

E E, &c., are the brake-levers. I prefer to make them S-shaped, as shown, and they are pivoted at F to the plates D. They are given the S shape, so as to be in effect bell-crank levers—in other words, so that horizontal movement of one part of the lever shall produce vertical movement in the other part.

G G, &c., are rods which extend right and left from the brake-levers E, which are between the wheels, being pivoted to them, as shown, and are connected, respectively, as shown, to the upper ends of the yokes H H.

I I are two links which connect the outside brake-levers E to the same yokes H by pivotal connections at both ends.

J J, &c., are brake-straps—that is to say, bands preferably of steel—which are pivoted at K K, &c., to the upper ends of the brake-levers E, and to those straps are fastened the brake-shoes L, preferably by bolts M, the heads of which are set in recesses made in the shoes, and the nuts on the ends of the bolts are on the back side of the straps J.

N N, &c., are retractile springs fastened at one end to the brake-levers E and at the other to the frame of the truck. The yokes H are pivotally connected to the cross-bars O O, which are respectively pivotally supported upon levers P P, which are connected to the front cross-bar of the truck-frame C by a slotted joint Q.

R is a rod provided with a few links of chain S at its end, which are wound upon the crank-bar T, as usual.

The operation of the device is as follows: The driver or motorman ordinarily applies the brake, and assuming that the car is moving to the left when the brake crank or lever is operated, the pull is applied through the instrumentality of the lever P, cross-bar O, yoke H, and rods I and G, respectively, causing the left-hand pairs of brake-levers E to be rocked upon their pivots, thus drawing the brake-straps and shoes down upon the periphery of the wheels. The other brake-levers E under this strain have a tendency to tip in the opposite direction; but this tendency is prevented by reason of the upper arc of the brake-levers coming in contact with the overlapping flanges D² of the plates D, which act as a rigid stop to them, and it will be ob-

served that the wheels revolve in such direction that when the brake-shoes begin to bear upon them their rotation tends to pull, as it were, the brake-shoes more and more firmly into contact; and it will be further observed that if for any reason it is necessary to brake the car very sharply—as, for instance, if an emergency arises—that the conductor at the other end of the car may also operate his brake-crank, and thus add pressure of the brakes upon the wheel; also, it will be further observed that, as shown in Fig. 2, the brake-shoes of this invention are made a trifle wider than the total surface of the wheel—that is to say, not only the treads thereof, but the flanges as well are included in the brake-shoe surface. I thus secure a more powerful brake-action than is ordinarily obtained. When the car is running in the opposite direction, the operation just described is repeated only at reverse ends of the car. When the brakes are to be thrown off, the conductor releases the brake-crank in the ordinary manner, and then the springs N N, &c., immediately return all the parts to their normal free condition.

A feature of this invention will be especially observed, which is that the brake-levers operate in sets of four—that is to say, the first pair and the third pair coast when the left brake is operated and the second pair and fourth pair coast when the car is running in the opposite direction.

I do not limit myself to the details of construction described and claimed, since it will be obvious to those who are familiar with this art that modifications may be made therein and still the essentials of the invention be employed.

Having described the invention, what is claimed is—

1. The combination of a series of pairs of pivoted brake levers, flexible brake straps connecting the brake levers, brake shoes on the straps, and means connecting the alternate pairs of brake levers with the crank rods or levers at the respective ends of the car, for the purposes set forth.

2. The combination of a series of pairs of pivoted brake levers, flexible brake straps connecting the brake levers, stops against which the levers rest to limit their movement in one direction, and means connecting the alternate pairs of brake levers with the respective crank rods or levers for the purposes set forth.

3. The combination of a series of pairs of pivoted brake levers, flexible brake straps connecting the brake levers, brake shoes on the straps and means connecting alternate pairs of brake levers with the crank rods at opposite ends of the car, for the purposes set forth.

4. The combination of a series of pairs of pivoted brake levers, flexible brake straps connecting the brake levers, brake shoes on the straps and means connecting alternate pairs of brake levers with the crank rods at opposite ends of the car, and stops to limit the movement of the brake levers in one direction, for the purposes set forth.

5. In a brake mechanism, bell-crank levers connected by flexible straps, brake shoes on the straps and means to operate said levers from the platform of the car, for the purposes set forth.

6. In a brake mechanism, bell crank levers connected by flexible straps, brake shoes on the straps, stops to limit the movement of said bell crank levers in one direction and means to operate simultaneously the alternate pairs of said levers from the respective platforms of the car, for the purposes set forth.

7. In a car brake system, a pair of oppositely acting bell-crank levers on each side of the wheels, brake straps provided with brake shoes, connecting the said levers, and means connecting alternate pairs with the opposite platform of the car, for the purposes set forth.

Signed at New York, in the county of New York and State of New York, this 3d day of July, A. D. 1895.

JOSIAH A. WEBBER.

Witnesses:

PHILLIPS ABBOTT,

HARRY H. ST. CLAIR, Jr.