S. B. LADD.

Device for Operating Car-Brakes.

No. 165,336. Patented July 6, 1875.

FIG. I

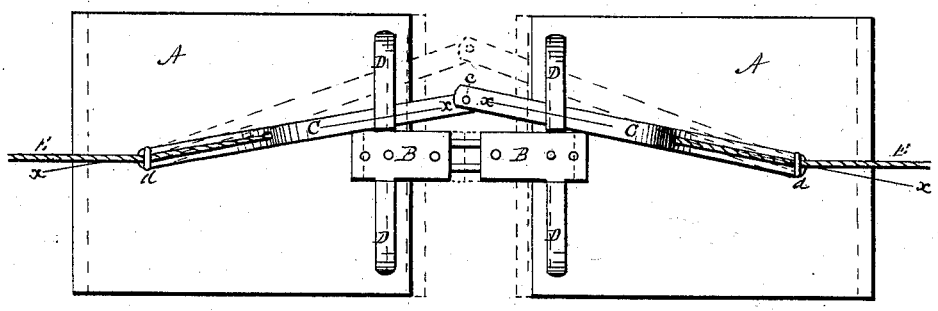
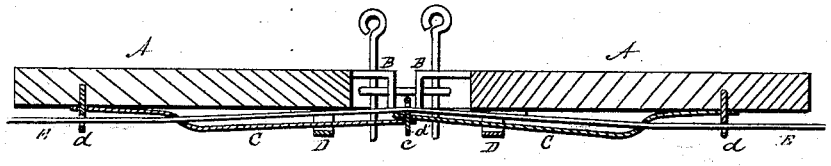


FIG. II



WITNESSES

F. B. Townsend

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INVENTOR

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UNITED STATES PATENT OFFICE.

STORY B. LADD, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN DEVICES FOR OPERATING CAR-BRAKES.

Specification forming part of Letters Patent No. **165,336**, dated July 6, 1875; application filed June 14, 1875.

To all whom it may concern:

Be it known that I, STORY B. LADD, of Washington, D. C., have invented certain new and useful Improvements in Devices for Operating Car-Brakes, Bells, Signal-Cords, &c., of which the following is a clear, full, and exact description, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 represents the bottom view of the end trucks of two cars with my improvement attached. Fig. 2 is a longitudinal section of the same through the line *x x*.

The object of my invention is to secure a cord, chain, or rod, or any combination of these, running the whole length of a train, that shall always be of a constant length, independent of the crowding together of or the stretching out of the cars, to be used by the engineer, or by any person on the train for controlling the car-brakes, bell, signals, or any other similar object; and it consists in the combination of parts hereinafter described and claimed.

To enable others skilled in the art to make and use my invention, I will proceed to describe the exact manner in which I have carried it out.

In the drawings, A A represent portions of car-body bottoms of a railway-train, and B B the ordinary coupling. On the under side of the bottom of each car, and near the end, is loosely pivoted the rod or arm C, having a free horizontal motion, and provided with the supports D D on each side of the coupling, in order that when two cars are brought together, if the arms do not come opposite each other, one of the arms can be lifted out of the support D on one side of the coupling, lowered, and passed under the car-coupling to the support on the other side, which will bring the two arms together. The pin *c* is inserted in the loose ends of the arms, whereby they are coupled. On the pivot-pins *d d* and *c* are secured guide-rings, through which passes the cord or chain E. The arms C are made of such a length that when two cars are coupled together, and at their maximum distance apart, and the free ends of the arms are brought together, the arms will form a slight angle with the line of the train, and the combined length of the two arms will be slightly greater than a straight line drawn between their two pivoted ends. The greatest length of the arms will be required when two cars, at their maximum distance apart, are in a sharp curve, and the arms happen to be on the outside of the curve, and therefore the arms must be made long enough to meet this emergency.

It is evident from this explanation that the cord or chain passing through the guide-rings *d d* and *d'* will be equal in length to the combined length of the arms, and will maintain this length without slack, independent of the variable distance between the cars. The eyes in the loose ends of the arms C C may be constructed with a hinge, so that their coupling will be secure for ordinary use; but under any great strain, as when the cars themselves become uncoupled, the eyes will become unfastened, and thus prevent the breaking of the arms.

It is apparent that the rod or chain E for each car must be exactly equal in length to the distance between the ends of the arms at the opposite ends of the car. This length can readily be adjusted by screw-sleeves and swivels, or by twin buckles, in the ordinary way.

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

The arms C C, pivoted in the rear of the buffers, and having a lateral motion, and provided with the guide-rings *d d* and *d'*, in combination with the cord E and supports D D, so as to allow the arms to be changed from one side of the buffer to the other, substantially as and for the purpose set forth.

STORY B. LADD.

Witnesses:

JAMES STEVENSON,

WILL H. MOXON.