

S. M. CUMMINGS.

CAR-BUMPER.

No. 192,570.

Patented July 3, 1877.

Fig. 1.

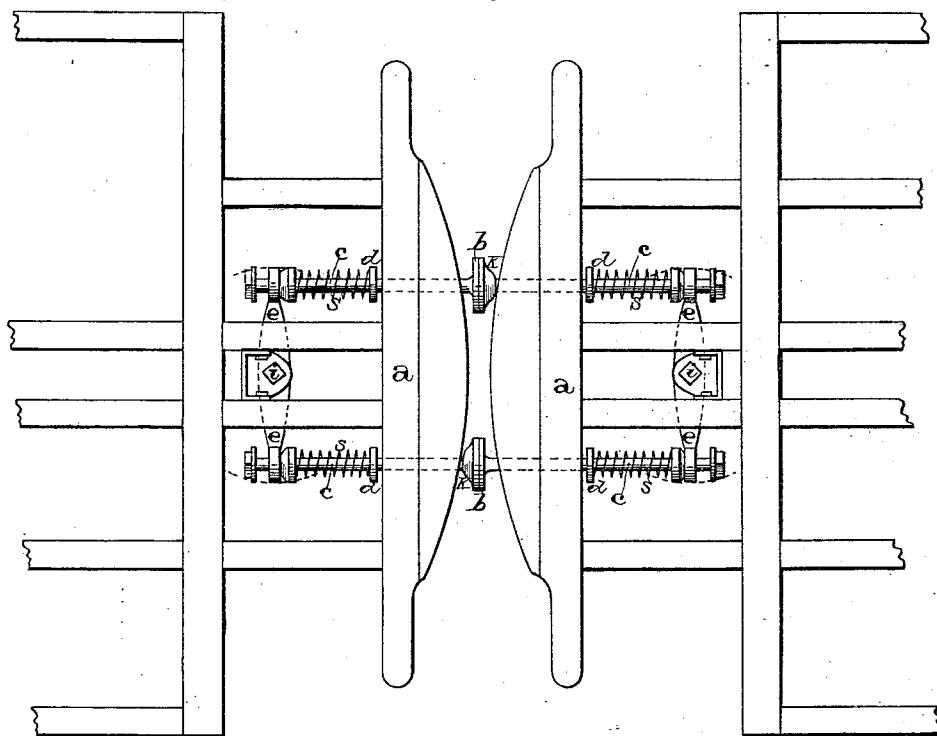
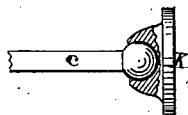


Fig. 2.



WITNESSES

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# UNITED STATES PATENT OFFICE.

SAMUEL M. CUMMINGS, OF ALLEGHENY, PA., ASSIGNOR OF TWO-THIRDS HIS  
RIGHT TO JOHN WHITE AND JOHN MARQUIS, OF SAME PLACE.

## IMPROVEMENT IN CAR-BUMPERS.

Specification forming part of Letters Patent No. 192,570, dated July 3, 1877; application filed  
June 7, 1877.

*To all whom it may concern:*

Be it known that I, SAMUEL M. CUMMINGS, of Allegheny city, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Compressible Buffers for Railroad Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in compressible buffers for railroad-cars; and it consists in connecting them by means of an equalizing bar, rod, lever, or its equivalent, whereby both buffers are kept in continuous contact with those on the preceding or following cars, be it on a curve or a straight track, to maintain an even motion of the cars, as will be more fully described hereinafter.

In the accompanying drawing, Figure 1 is a plan view of my invention, and Fig. 2 is a detail view of the same.

*a* represents the platform of a car, beyond which slightly project two buffers, *b*, one of them being placed at each side of the car at a suitable distance from the coupling between them. The shanks *c* of the buffers, extending backward, pass through holes in the ends of the equalizer *e*, and these shanks are surrounded by coiled springs *s*, which press the heads of the buffers outward.

The space between the equalizer and collar *d*, in which the springs are confined, may be suitably adjusted by means of the nuts upon the ends of the shanks. The equalizer *e* connecting the rear ends of the shanks of the buffers is pivoted in the center *i*, the pivot being firmly secured to the car, so that any pressure brought against the heads of the buffers will be resisted at this point.

One of the heads of the buffers is rigid, and moves only horizontally forward and backward with the shank to which it is attached, while the head *K* on the second buf-

fer moves in all directions by means of a ball-joint or some other device. These heads are distributed in such a manner that each movable head encounters a fixed one on the preceding or following cars.

By the couplings the heads of all the buffers of the train are brought together, and then held in unbroken contact by the pressure of the springs; and as long as the pressure against the buffers remains equal, the equalizer remains motionless; but when it becomes greater on one side than on the other, as is the case on a curve, the equalizer will recede where the greater pressure occurs, and advance correspondingly on the opposite, thus compensating and making the pressure even on both sides and maintaining an even motion.

The buffers of the above construction are designed not only to prevent an uneven strain upon the cars when in motion, but also to avoid any sudden concussion, and consequent jarring, which inevitably occurs at the starting and stopping of trains, or when the velocity of a train is suddenly changed.

Although certain forms of devices have here been shown, it is evident that other and equivalent devices may be substituted in their stead without departing from the spirit of my invention, the object of which is to lessen the unequal strain upon the cars, to cause them to run more smoothly, and to prevent the rolling or rocking of the cars when in motion.

I am aware that compressible buffers are used to steady the motion of cars; but, acting independently of each other, the strain becomes unequal on a curve, being greater on the one than the other.

I am also aware that car-couplings have been used in pairs, and have had their rear ends united together by equalizing-rods, and this I broadly disclaim. In my invention the rod acts, in combination with the buffers, for an entirely different purpose. It is immaterial what coupling device is used to unite

the cars together, as the coupler acts entirely by itself, and without any connection with my buffers.

Having thus described my invention, I claim—

In a compressible buffer for cars, the combination of the shanks *c*, having their rear ends connected together by a pivoted equalizing-rod, *e*, springs *s*, and movable and rigid heads *K*, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 31st day of May, 1877.

SAMUEL M. CUMMINGS.

Witnesses:

JOHN MARQUIS,  
JOHN WHITE.