(No Model.)

# T. A. BISSELL & C. BERGMAN.

## BUFFER PLATFORM FOR CARS.

No. 457,929. Patented Aug. 18, 1891.

Fig. 1.

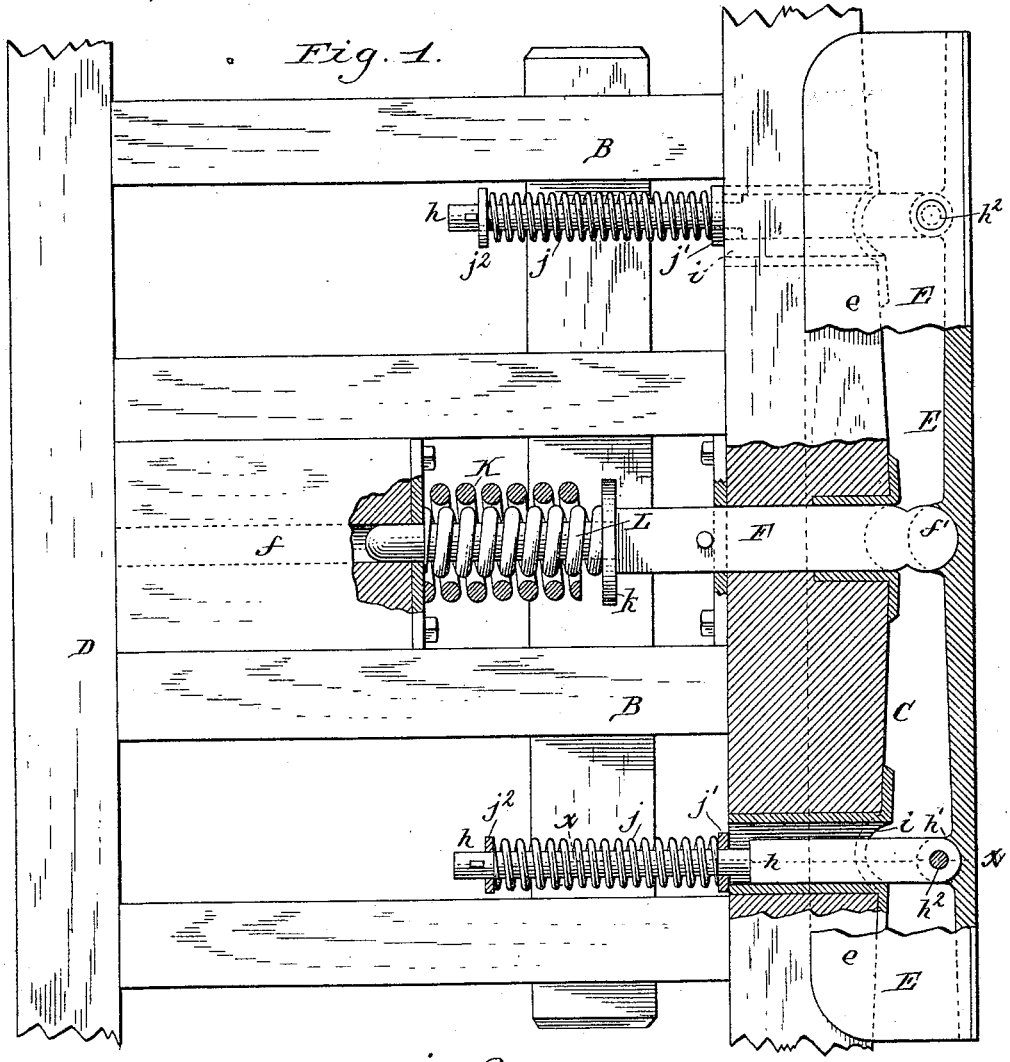



Fig. 2.

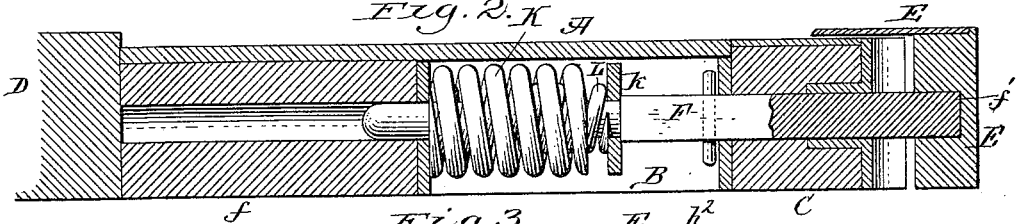
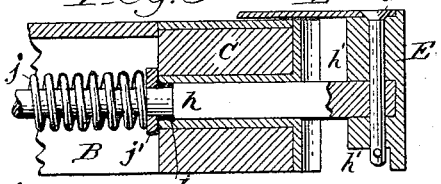



Fig. 3.

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# UNITED STATES PATENT OFFICE.

THOMAS A. BISSELL AND CLAES BERGMAN, OF BUFFALO, NEW YORK.

## BUFFER-PLATFORM FOR CARS.

SPECIFICATION forming part of Letters Patent No. 457,929, dated August 18, 1891.

Application filed December 23, 1889. Serial No. 334,660. (No model.)

*To all whom it may concern:*

Be it known that we, THOMAS A. BISSELL and CLAES BERGMAN, citizens of the United States, residing at Buffalo, in the county of Erie and State of New York, have jointly invented new and useful Improvements in Buffer-Platforms for Railway-Cars, of which the following is a specification.

This invention relates to railway-cars which are provided with a movable extension or platform which forms with the platform of an adjoining car a continuous platform between the two coupled cars, and more especially to such cars in which a light auxiliary spring is employed in addition to the usual heavy buffer-spring for the purpose of projecting the platform-extension, the heavy buffer-spring being utilized only for resisting violent shocks or jars, while the weaker auxiliary spring comes into action before the buffer-spring and serves to keep the buffer-plates of two adjoining cars in close contact. The coupling-hooks of the cars are by this arrangement subjected to the comparatively light pressure of the auxiliary spring, which enables the cars to be easily coupled and uncoupled.

The object of our invention is to simplify the means whereby the extensible platform is projected and to reduce the cost thereof.

In the accompanying drawings, Figure 1 is a sectional top plan view of the platform of a railway-car provided with our improvement, with the flooring removed. Fig. 2 is a central longitudinal section thereof. Fig. 3 is a fragmentary longitudinal section in line $x\,x$, Fig. 1.

Like letters of reference refer to like parts in the several figures.

A represents the stationary platform of the car having the usual longitudinal timbers B and cross-timber C, and D is the end sill of the car.

E represents the movable platform-extension, consisting of a transverse vertical buffer-plate having at its upper end a horizontal extension or threshold-plate $e$ extending inwardly over the end timber C. The platform-extension E is supported centrally in front of the end timber C by the buffer bar or stem F, which passes with its outer rectangular portion through a correspondingly-shaped opening in the end timber C, and is guided with its inner cylindrical portion in an opening or socket formed in the buffer-block $f$. The buffer-bar F is provided at its front end with a circular head $f'$, which is arranged in a concave seat or cavity formed on the inner side of the buffer-plate. This head forms a fulcrum or pivot upon which the buffer-plate or platform-extension oscillates. The buffer-plate is held in place upon the buffer-bar F by two inwardly-projecting stay-rods $h\,h$, attached to opposite ends of the buffer-plate. The outer ends of these stay-rods are arranged between lugs $h'$, formed on the inner sides of the buffer-plate, and are pivoted to the latter by vertical bolts $h^2$, passing through the lugs and the stay-rods. The outer portions of the stay-rods pass through elongated openings $i$ in the end timber C, and are each provided on the inner side of this timber with a light spiral spring $j$, which is interposed between a follower or washer $j'$, arranged loosely upon the inner portion of the stay-rod and resting against the timber C, and a collar $j^2$, secured to the inner end of the rod. The springs $j$ draw the buffer-plate inwardly toward the end timber C and thereby confine the socket of the plate upon the head of the buffer-bar, while at the same time allowing the buffer-plate to oscillate to a certain extent. These springs simply oppose the oscillating movement of the buffer-plate and do not offer any resistance to the buffer-plate when the same is parallel with the end of the car, but move bodily inwardly with the buffer-plate.

The horizontal threshold-plate $e$ is made separate from the buffer-plate and is secured thereto by the same bolts $h^2$, whereby the stay-rods are pivoted to the buffer-plate. This forms a very simple construction which enables the threshold-plate and buffer-plate to be constructed of wrought-iron and permits either part to be replaced in the event of breakage without rendering the other part useless, as is the case when the parts are cast in one piece of malleable iron.

K represents the main buffer-spring surrounding the inner cylindrical portion of the buffer-bar F, and which is arranged between the buffer-block $f$ and a collar or shoulder $k$ on the buffer-bar.

L represents an auxiliary platform-extension spring, whereby the movable platform-

extension or buffer-plate is held in a projected position. This auxiliary spring surrounds the buffer-bar within the main spring K and bears with its inner end against the buffer-block *f* and with its outer end against the collar or shoulder of the buffer-bar. The auxiliary spring is somewhat lighter or weaker than the main buffer-spring K and extends outwardly beyond the main buffer when extended, as shown, so as to be compressed or acted upon before the main spring when the buffer-plate is moved inwardly. The auxiliary spring is made of sufficient strength and stiffness to hold the platform-extension in a projected position in contact with the extension of an opposing car under ordinary circumstances. When the movable platform or buffer-plate receives an unusual shock or blow which overcomes the resistance of the light auxiliary spring, the shoulder of the buffer-bar strikes the outer end of the powerful main spring K, and the latter resists the further inward movement of the buffer-plate.

In coupling or uncoupling cars provided with our improvement it is only necessary to overcome the resistance of the light platform-extension spring, which is comparatively small. The light auxiliary spring is thus relied on for opposing the light shocks in coupling, &c., and for holding the platform-extensions of the cars in contact, while the heavy buffer-spring is only brought into action when the shock is greater than the resisting capacity of the light spring.

Our improved means of accomplishing the desired results are very simple and inexpensive, as they consist of but two springs without the use of any additional parts.

We claim as our invention—

1. The combination, with the platform of a railway-car and a buffer-plate or platform-extension movable on the main platform, of a main buffer-spring arranged between the movable extension and a stationary part of the main platform and an auxiliary light spring arranged within the main spring between the movable platform-extension and the stationary part of the platform and projecting beyond the main spring when extended, and yielding stay-rods attached to the platform-extension on opposite sides of its pivot and guided on the main platform, substantially as set forth.

2. The combination, with the platform of a railway-car, of a buffer-plate or platform-extension having a seat or cavity, a buffer-bar having a head loosely seated in said cavity, and yielding stay-rods, whereby said buffer-plate or platform-extension is held on said buffer-bar, substantially as set forth.

3. The combination, with the end timber of the platform, the buffer-bar, and the movable buffer-plate or platform-extension, of stay-rods attached at their outer ends to the buffer-plate and provided at their inner ends with a shoulder or collar, a follower or loose washer surrounding the stay-rods and bearing against the end timber of the platform, and spiral springs surrounding the stay-rods and interposed between said shoulder and follower, substantially as set forth.

4. The combination, with the main platform and the movable buffer-plate or platform-extension provided with a separate threshold-plate, of stay-rods attached at their outer ends to the buffer-plate, and vertical bolts, whereby the stay-rods are pivoted to the buffer-plate and which serve at the same time to secure the threshold-plate to the buffer-plate, substantially as set forth.

Witness our hands this 18th day of December, 1889.

THOMAS A. BISSELL.
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Witnesses:
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