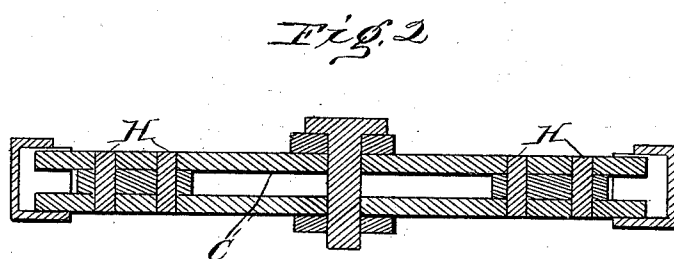
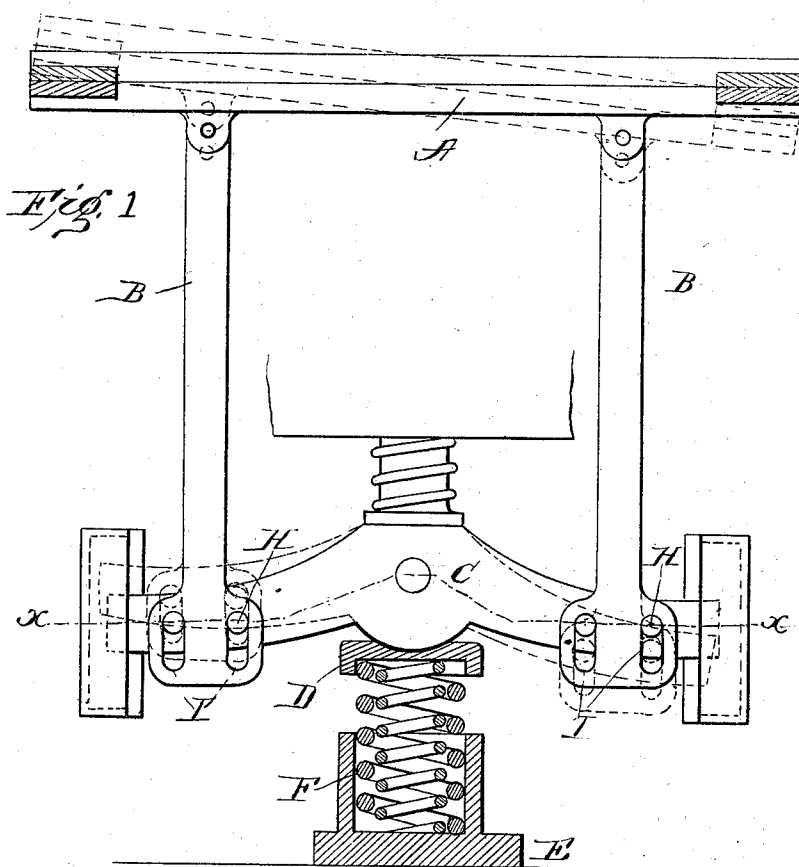


(No Model.)

H. H. SESSIONS.
BUFFER EQUIPMENT FOR CARS.

No. 561,447.

Patented June 2, 1896.



Witnesses:
J. M. Fowler
Bennie Griffith

Inventor:
Henry H. Sessions
by *Lehurek & Lehurek*
his Attorneys.

UNITED STATES PATENT OFFICE.

HENRY H. SESSIONS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE STANDARD COUPLER COMPANY, OF NEW YORK, N. Y.

BUFFER EQUIPMENT FOR CARS.

SPECIFICATION forming part of Letters Patent No. 561,447, dated June 2, 1896.

Application filed February 1, 1896, Serial No. 577,710. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. SESSIONS, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Buffer Equipments for Cars; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention relates to improvements in the construction and equipment of railway-cars, the invention relating more especially to the buffing equipment of passenger-cars, the object of the invention being, among others, to provide a buffing mechanism which will bear the shocks incident to collisions and hauling in the plane of the platform in a manner to protect the body of the car and prevent derailment and at the same time insure the proper yielding or accommodation of the buffing-plates in turning curves and cause them to automatically and promptly resume the most effective position at right angles to the length of the car-bodies after passing a curve.

The invention consists, primarily, in a buffer embodying a pivoted equalizing-bar connected with the buffer by differential bearings, so as to form a longer lever on that side of its pivotal center moved forward or advanced under the strain, whereby the tendency of the equalizer is to automatically resume its normal position and to resist the tendency to turn when unequal pressure is applied to the buffer.

The invention further consists in certain novel details of construction and combinations and arrangements of parts, all as will be now described, and pointed out particularly in the appended claims.

Referring to the accompanying drawings, Figure 1 is a top plan view of a buffer equipment constructed in accordance with my present invention, a portion of the equalizer-bar being broken away. Fig. 2 is a vertical section on the line *x x*, Fig. 1.

Like letters of reference indicate the same parts in both figures.

In the accompanying drawings, illustrating

my invention, I have entirely omitted the car and platform framing, together with the coupler mechanism and foot-plate or vestibule frame, and it will be understood that any ordinary or preferred form or arrangement of such parts may be employed in connection with my present buffer equipment, which also, so far as the face or buffer plate, &c., is concerned, may be similar in all respects and may be connected with or support any of the appliances ordinarily connected with or supported by these parts.

The letter A indicates the face or buffer plate of any ordinary or preferred type, and connected with it by pivotal connections on each side of the center are a pair of supporting or push rods B, which may, as usual, pass through the buffer-beam (not shown) and are connected at their rear ends (in a manner to be presently described) to the ends of a centrally-pivoted equalizing-bar C. This bar C is pivoted to a head or plunger D, and interposed between these parts and the car-sill E is the usual spring F for advancing the buffer-plates, taking up shock, or holding the coupling and vestibule mechanism in the most efficient working position.

As before explained, it is of the utmost importance that while the buffer-plate should be capable of yielding when the cars are on a curve it should at once return to normal position at right angles with the body of the car when the curve is passed, and, furthermore, that the shocks and strains incident to collisions or to travel should be transmitted in as direct a line as possible to the car-body without tending to move the body laterally; and in order to accomplish these results I provide differential bearings between the buffer and equalizer-bar, whereby the end of the bar which by the deflection of the buffer-plate is advanced will exert a greater leverage than the other end, and hence any further pressure on the buffer-plate tends to again throw the equalizing-bar and buffer to their right-angle position.

By reference to the drawings it will be seen that this result is accomplished by connecting each of the push-rods B to the equalizer-bar by differential bearings or independent connections located at different distances

from the pivotal center of the equalizer-bar, such connections or bearings being preferably formed by pins or bearing-bolts H and slots or slot-bearings I, through which the pins or bolts pass. The pins H are preferably located on the equalizer-bar between the top and bottom plates thereof, as indicated in Fig. 2, and are different distances from the pivotal center of the bar, while the ends of the push-rods are widened and provided with the slots I, through which the pins pass. With such an arrangement, it will be seen that when the buffer-plate is deflected from its right-angle position the leverage exerted by the opposite ends of the bar will be different, the outer pin and slot on the advance end of the bar will be in engagement, (see dotted lines,) and the inner pin and slot on the opposite or retracted end of the lever will be in engagement, thereby throwing the greatest leverage on the end of the bar which is advanced, and hence the tendency under pressure is to always return the parts to the right-angle position, where the leverage is equal. This special arrangement permits the pin at each end upon which no pressure is exerted to move freely in the slot, and the length of the slots is made sufficient to allow of any required deflection of the buffer-plate, as will be readily understood by those skilled in the art.

Obviously other well-known forms of differential bearings may be substituted for the particular bearings shown, and hence while this particular form of bearing has many advantages I do not wish to be limited specifically thereto.

I claim—

1. In a car equipment, the combination with a buffer, of a pivoted equalizing-bar and differential bearings interposed between the ends of the bar and buffer, whereby a differential leverage is exerted by the bar tending to return the parts to normal position when pressure is exerted on the buffer; substantially as described.

2. In a car equipment, the combination with a buffer, of a pivoted spring-pressed equaliz-

ing-bar and differential bearings interposed between the ends of the bar and buffer whereby a differential leverage is exerted by the bar tending to return the parts to normal position when pressure is applied to the buffer; substantially as described.

3. In a car equipment, the combination with a buffer-plate, of a pivoted equalizing-bar and differential bearings interposed between each end of the equalizer-bar and each end of the buffer-plate; substantially as described.

4. In a car equipment, the combination with a buffer-plate and rearwardly-extending push or supporting rods pivotally connected with the buffer-plate, of the pivoted equalizer-bar and differential bearings between the rods and bar; substantially as described.

5. In a car equipment, the combination with a buffer-plate and rearwardly-extending push or supporting rods pivotally connected with the buffer-plate, of the spring-pressed pivoted equalizer-bar and differential bearing between the rear ends of the rods and bar; substantially as described.

6. In a car equipment, the combination with a buffer-plate and rearwardly-extending push or supporting rods pivotally connected with the buffer-plate, of the pivoted equalizer-bar and the pin-and-slot connections between the bar and rods, the cooperating pins and slots for each rod being located at different points from the pivotal center of the bar to form differential bearings; substantially as described.

7. In a car equipment, the combination with the buffer-plate, the pivotal equalizer-bar having top and bottom plates with bearing-pins extending between the plates at opposite ends of the bar, and the pins at each end being located at different distances from the pivotal center of the bar, and the push or supporting rods having slot-bearings through which the pins pass; substantially as described.

HENRY H. SESSIONS.

Witnesses:

DAVID J. HARRIS,
ALFRED ERNEST BILL.