(No Model.) 2 Sheets—Sheet 1.

T. L. McKEEN.

BUFFER FOR RAILROAD CARS.

No. 554,496. Patented Feb. 11, 1896.

Fig. 1.

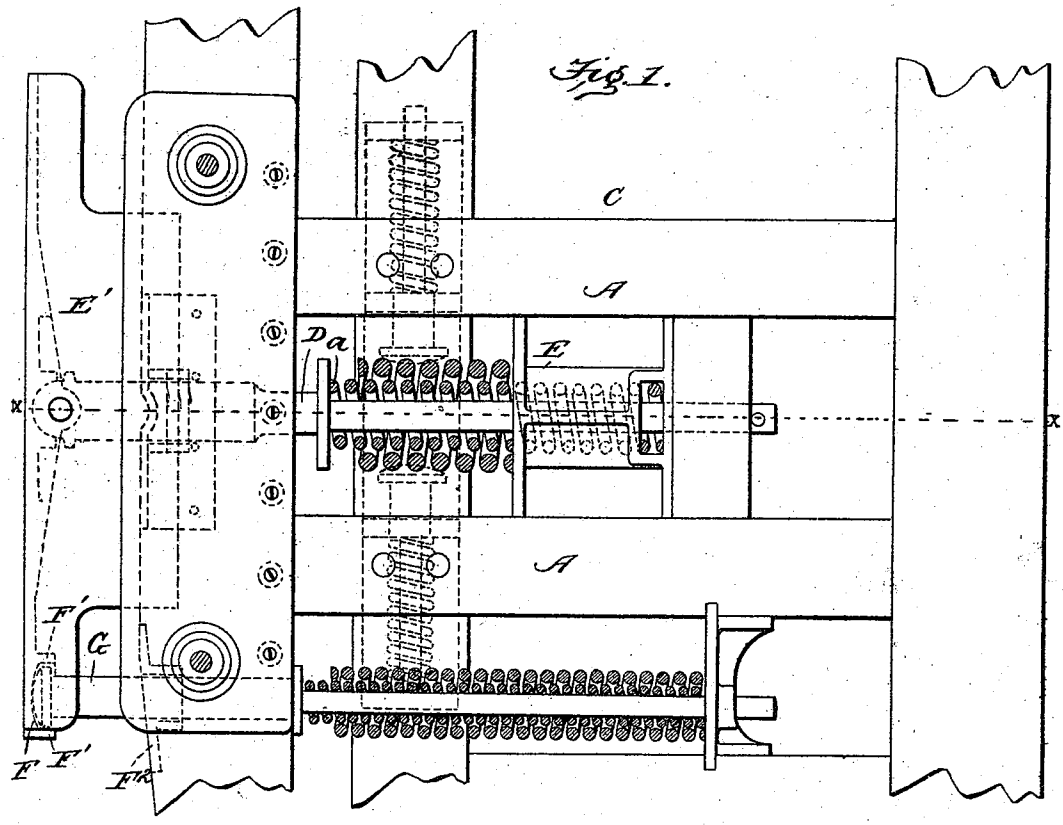
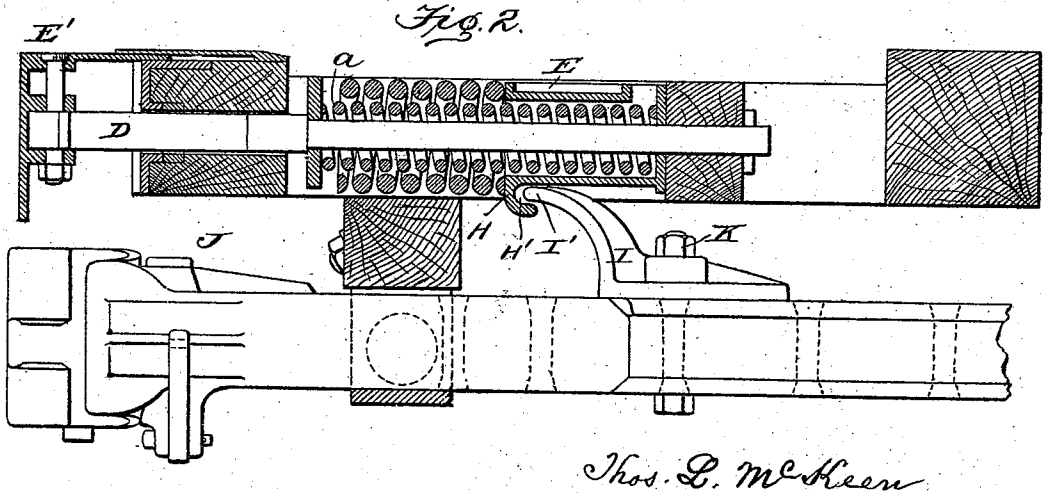


Fig. 2.



Thos. L. McKeen
INVENTOR

WITNESSES:

Edwin L. Bradford
N. Curtis Lammond

BY
Wm. C. R. W. Sinclair
ATTORNEY.

(No Model.) 2 Sheets—Sheet 2.

T. L. McKEEN.

BUFFER FOR RAILROAD CARS.

No. 554,496. Patented Feb. 11, 1896.

Fig. 3.

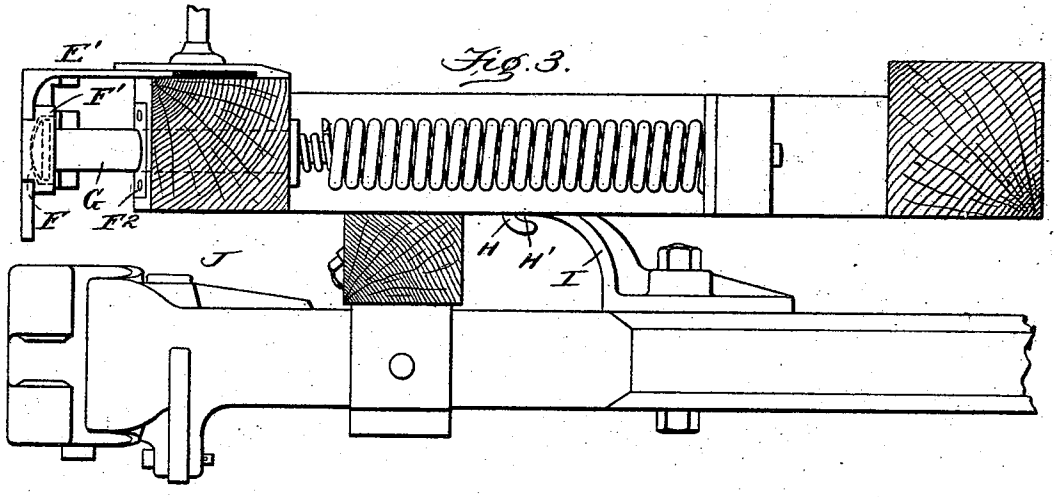
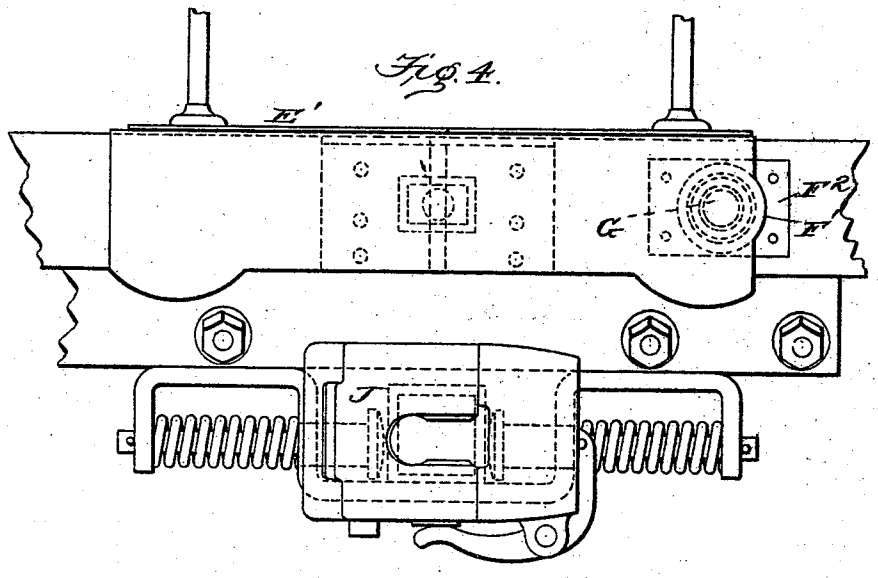


Fig. 4.



WITNESSES:

Edwin L. Bradford

N. Curtis Lammond

Thos. L. McKeen
INVENTOR

BY

Wm. C. R. W. Intire
ATTORNEY.

UNITED STATES PATENT OFFICE.

THOMAS L. McKEEN, OF NEW YORK, N. Y., ASSIGNOR TO ISAAC G. JOHNSON & CO., OF SAME PLACE.

BUFFER FOR RAILROAD-CARS.

SPECIFICATION forming part of Letters Patent No. 554,496, dated February 11, 1896.

Application filed November 16, 1895. Serial No. 569,200. (No model.)

To all whom it may concern:

Be it known that I, THOMAS L. McKEEN, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in 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 appertains to make and use the same.

My invention relates to certain new and useful improvements in buffer-platforms for railroad-cars, such as shown and described in Letters Patent No. 500,414, granted to me June 27, 1893.

It has for its objects to provide a suitably-yielding buffer to relieve the cars from jarring and uneven movement and which shall at the same time constitute a continuation or bridge between the ordinary platform, thus insuring a sure footing for passengers passing from the platform of one car to another, and at the same time to retain the lateral stops on the forward end of the buffer-bar, as shown in my patent hereinbefore referred to, and which were necessary in that construction to limit the horizontal play of the buffer-head and auxiliary platform. The accomplishment of these desired ends is secured through the peculiar construction and arrangement of the several parts constituting my invention and which I will now proceed to describe in detail, referring by letters to the accompanying drawings, in which—

Figure 1 represents a plan view, partly in section, of my improved buffer-platform and platform proper, only one of the side buffer-springs being shown. Fig. 2 is a longitudinal central section taken at the line $x\,x$ of Fig. 1. Fig. 3 is a side view, partly in section, showing the buffer-platform, platform proper, and coupling mechanism; and Fig. 4, an end view of the buffer-platform.

Similar letters denote like parts in the several figures of the drawings.

A A represent the ordinary central and parallel sills of the body or frame of an ordinarily-constructed railroad-car, and between which the centrally-located buffer is placed, and B is the usual head or transverse beam which constitutes the support for the usual platform C.

D is the buffer-stem which is arranged in any suitable manner, such—for instance, as shown in my patent above referred to—the rear end passing through the box E, which constitutes the housing for the spring a of smallest diameter, and also for the take-up plates for the equalization or restoration of the spring-power. The forward end of the stem D is pivotally connected, as shown, with the buffer-head E′, so that a semicircular support is given to the latter, as clearly indicated by dotted lines in Fig. 1. The projecting lugs on each side of the stem and corresponding stops on the buffer-head, as shown and described in my Letters Patent herein referred to, are retained, and in addition thereto I provide the buffer-head near the outside limits thereof with curved or concave recesses F, having circumferential walls or flanges F′ extending rearward and with flat faces adapted to contact with the metal socket-plates F^2, through which the enlarged forward portion of the auxiliary buffer-stems G pass, whereby the rearward motion of the buffer-head is limited and its contact with the platform-sill is guarded against.

The buffer-stems G in their general construction are what are known as the "English buffer;" but I construct the front end with a curved or convex face terminating in straight parallel edges adapted to impinge or contact with the rearward projections F^2 of the recessses F when the buffer-head is accommodating itself to the changed relation of the platforms in traveling around curves, and it will be observed that the arc of the curved or concave recesses F is greater than that of the end of the buffer-stems in order that this action may take place, and it will be seen also that the circumferential rearwardly-projecting walls F^2 coming in contact with the edge of the heads of the buffer-stems will prevent undue horizontal and vertical movement of the buffer-platform, as is the case where there are no side buffer-supports. The buffer-stems G are provided with suitable springs and boxes substantially like the central buffer-stem, or in any other suitable manner.

When the adjacent cars of a train are

brought together and properly coupled by the couplers J, the buffer-heads E with their auxiliary platforms E′ are forced backward against the action of the buffer-springs and constitute a yielding but ever-present bridge between or continuation of the ordinary car-platforms.

When the train is on a straight track the strain is equally divided upon the central and the two side buffer-springs; but when the train is traveling upon a curve either in one or another direction the buffer-spring on the side of the shortest curve is further compressed, while the center and opposite outside buffer-springs are correspondingly and proportionately relieved, and as a result the reaction of the opposite outside spring forces the auxiliary platform and buffer-head forward to close the space which would otherwise exist between the faces of the platforms of the two cars, and the curved ends of the side buffer-stems within the curved boxes or recesses in the rear face of the pivoted buffer-head permit of this ready adjustment of the latter without any undue strain upon the central buffer-stem or its pivotal connection with the buffer, and it is also unnecessary to provide for any longitudinal movement between the central buffer-stem and the buffer-head, thus avoiding the vibration and noise which would otherwise take place; and it will be observed from the fact that the heads of the side buffer-stems resting loosely in the curved recesses in the buffer-platform, and being disconnected therefrom by any hinge or pivot, that, when the train is traveling around a severe curve, unlike the pivoted side buffer-stem, the buffer-platform on the outside curve is free to move away from the head of the buffer-stem on that side without pulling against the spring of such stem, and consequently much stiffer springs may be employed on the side buffer-stems to secure the steadying of the train than would be possible if the heads of the buffer-stem were pivotally connected with the buffer-platform.

As shown in Fig. 3, the box E, which constitutes the housing for the buffer-spring and guide for the central buffer-stem, is formed at its front end with a vertical flange H constituting a curved recess H′ adapted to receive the toe I′ of a shoe I, which is secured to the shank of the coupler J. This shoe I is made box-like or with a flange on each side extending downwardly a short distance on each side of the shank, to which it is rigidly secured by the bolt K, the flanges effectually preventing the shoe from twisting or turning and to hold it in proper relation with the box E, with which it is in nowise connected, in order that it may move freely backward with the coupler when the cars are buffed or suddenly stopped, and to also move up freely into the recess when the cars are suddenly stretched up or when the buffer-springs become weakened from long usage, and thus securing at all times the proper relation between the buffer-platform and the car-platforms.

It will be understood that by reason of the curved flange H and recess H′, and the toe formation I′ of the shoe I, that the toe I′ when in position within the recess H′ holds the box E in absolute parallelism or in a straight line with the buffer-stem, and consequently the box E in its longitudinal movement has no tendency to twist or pinch against the buffer-stem.

It will also be observed and understood that the box-like form of the shoe I, with its vertical flanges on each side embracing the shank of the coupler J, permits said shoe to be readily removed and replaced without in any manner affecting the buffer-frame or rendering it necessary to remove or manipulate the same.

As my invention relates only to the novel features of construction of the side buffers and the receiving-sockets in the buffer-head and to the peculiar construction and arrangement of the box E and shoe I, I have not gone into any elaborate description of the other parts shown, and a full and clear understanding may be had of such parts as are not definitely described by referring to my Letters Patent hereinbefore referred to.

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the stationary platform C, and the buffer-head and platform secured in pivotal position with the central buffer-stem D, and provided with concave recesses F and surrounding flanges or walls F′, the side buffer-stems G, having convex or curved heads with straight edges adapted to contact with the walls F′, substantially as and for the purposes set forth.

2. The buffer-head E′ provided each side of the center with concave recesses F and rearwardly-projecting wall F′ adapted to receive the convex head or end of side buffer-stems and to contact with the metal socket-plates F^2 to protect the platform-sill, substantially as described.

3. The box E provided with the flange H and recess H′ and secured in position with the side sills of the car, in combination with the shoe I secured to the shank of the coupler and formed with the toe I′ adapted to enter the recess H′, substantially as and for the purposes set forth.

4. The box-like shoe I provided with the toe I′ and flanges adapted to embrace the coupler-shank and secured thereto by a bolt, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS L. McKEEN.

Witnesses:
J. H. REILLY,
W. G. MARSHALL.