

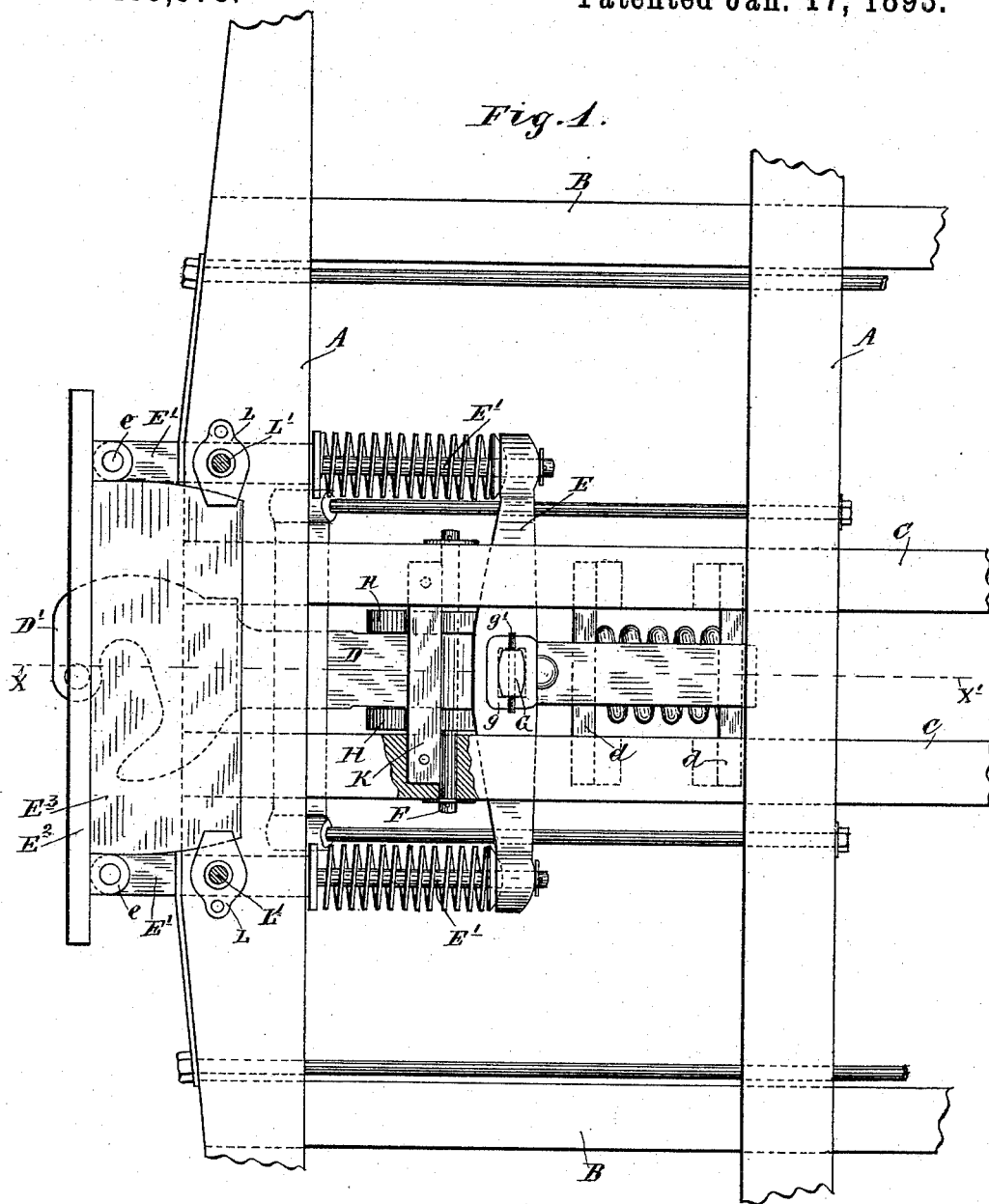
(No Model.)

2 Sheets—Sheet 1.

A. C. McCORD.  
CAR PLATFORM.

No. 489,978.

Patented Jan. 17, 1893.



Witnesses.  
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A. H. Opsahl.

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Alvin C. M<sup>o</sup>. Lord  
By his Attorney.  
Jas. F. Williamson

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

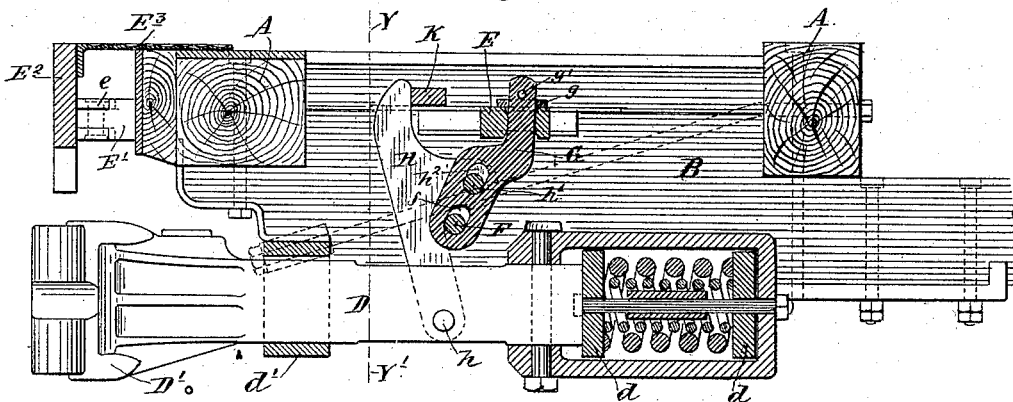


Fig. 3.

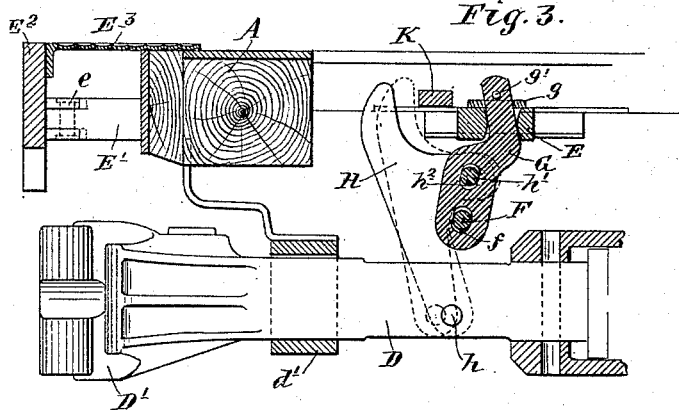
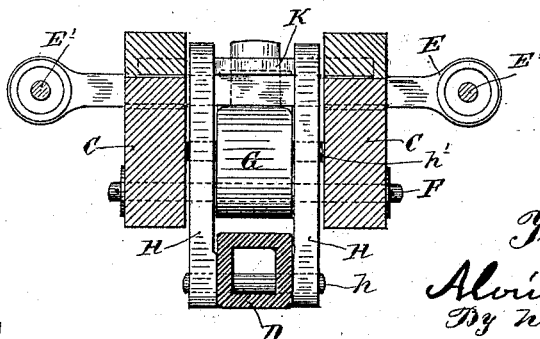


Fig. 4.



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# UNITED STATES PATENT OFFICE.

ALVIN CARR McCORD, OF CHICAGO, ILLINOIS.

## CAR-PLATFORM.

SPECIFICATION forming part of Letters Patent No. 489,978, dated January 17, 1893.

Application filed September 26, 1892. Serial No. 446,910. (No model.)

### *To all whom it may concern:*

Be it known that I, ALVIN CARR McCORD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Platforms; 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 platforms for passenger cars; and has for its object to provide an improved mechanism for equalizing the shock and pressure between the buffers and the draw-bars in the coupling or closing movement of the cars, and for preserving a tight joint between the sliding members of the platforms and the two sets of buffers, under the pulling strain on the couplers. More specifically stated, the construction is such that, when the buffers first come in contact and are forced back, the couplers will be pressed outward into engagement with each other, and when the couplers are forced back, the buffers will be forced outward with an increased strain, until the shock between the buffers and the couplers becomes equalized; and on the other hand, when the draw-bars are pulled out, under the pulling strain on the couplers, the buffers will be forced outward coincidently therewith, so as to maintain a close joint between the two platforms and a comparative rigidity of the train, at all times.

To this end, my invention consists of certain novel devices and combinations of devices, which will be hereinafter fully described and will be defined in the claims.

The accompanying drawings illustrate the invention, wherein like letters referring to like parts throughout the several views,—Figure 1 is a plan view of my platform, with some parts broken away, and others removed. Fig. 2 is a longitudinal section, on the line X X' of Fig. 1, showing the buffer-plate and equalizer-bar, at the limit of their backward motion, and the draw-bar at the corresponding outward limit, at the same instant of time. Fig. 3 is a similar view on the same line, with some parts broken away, showing in full lines, the lever mechanism, buffers and draw-bar,

in their normal positions, as they appear before the two cars have met, and showing, in dotted lines, the positions assumed by these parts, as the cars come together; Fig. 4 is a cross section on the line Y Y' of Fig. 2, looking from the front.

A A represent the cross timbers, and B B and C C the outer and inner pairs of longitudinal timbers, constituting together the frame-work or draft timbers of the platform.

D is the draw-bar, spring seated between the follower plates  $d$ , and upheld by the stirrup  $d'$ , in the customary manner.

D' is a coupler, which may be of any suitable construction.

E is the equalizer-bar, connected by the spring-seated buffer-rods E', with a continuous buffer-plate E<sup>2</sup>, the connection between the rods and the buffer-plates, being by knuckle-joints  $e$ .

E<sup>3</sup> is the sliding plate of the platform and is carried by the continuous buffer E<sup>2</sup>, with its rear end overlapping the end timber A.

F is a fulcrum-rod, fixed to the central draft timbers C C, between the draw-bar and the equalizer.

G is a strong lever fulcrumed on the rod F, at its lower end, and engaged at its upper end, by the equalizer-bar. As shown, the equalizer-bar is pivoted on the upper end of the said lever G and the two are secured together by a washer and pin  $g$  and  $g'$ . The head of the lever G is preferably made oblong, and the hole in the equalizer-bar, is made of similar shape, and the corners of the bearing portion of the said lever are rounded off, so as to permit a limited oscillation or pivotal movement of the equalizer-bar.

H H are a pair of twin levers, operating as a single lever, the two members of which are pivotally connected at their lower end to the draw-bar, as shown at  $h$ , and are connected together and to the lever G, by a tie-rod  $h'$ , which passes through a slot,  $h^2$ , in the lever G. The connection between the lever G and the fulcrum-rod F, is also made by a slot  $f$ . Both the slots  $f$  and  $h^2$  extend lengthwise of the lever G and permit to the same a limited sliding movement.

K is a stop-bar or fulcrum-plate fixed to

the draft-timbers, in the path of the upper end of the lever H, in its backward motion, and becoming a fulcrum for the same, in a certain part of the equalizing action. The relative positions of the fulcrum-rod F and the stop or fulcrum-bar K, are such that the rod F, is struck by the lever H, at a point below the tie-rod *h'*, connecting the same with the lever G, before the upper end of the lever H strikes the stop-plate K. Hence in the backward movement of the lever H, the rod F becomes a fulcrum to the same, before the top of the lever is stopped by the bar K.

Operation. With the above described construction clearly in mind, the operation in the equalizing action, may be readily understood and followed, to-wit: Supposing the parts to be in their normal position, as shown in Fig. 3, in full lines. Then when the buffers of the two cars, first come together, the equalizer will be thrown backward, carrying with it the upper end of the lever G, and the upper end of the lever H; and in this action, the lever H will fulcrum over the rod F, and the draw-bar will be thrown outward beyond the buffer-plate, permitting the two couplers to come together and take a part of the strain. Then the couplers will be forced backward, carrying with them the lower ends of the lever H, which will then fulcrum over the rod F, and throw the upper end of the lever H outward carrying with it, through the tie-rod *h'*, the upper end of the lever G and the equalizer-bar, thereby throwing the buffers together with increased force. These actions continue, in the closing movement of the cars, until the strain is equalized between the buffers and the draw-bars, the balancing action taking place over the fulcrum rod F. Having regard now to the action, when the cars are under strain to move apart, it is obvious that the draw-bars will be pulled outward. The lever H will then fulcrum with its upper end against the bar K, and in the outward movement of the draw-bar, the upper end of the lever G will be thrown outward with the lever H, carrying with it the equalizer and the buffers. Hence, the buffers and the couplers will maintain their relative positions, preserving a tight joint between the platforms and the rigidity of the train. The relative position of the fulcrum-rod F and the tie-rod *h'*, connecting the levers G and H, being as shown, the buffers and the draw-bars will move outward, under the pulling strain, practically together, and to the same relative distances; but it is obvious that the points F and *h'*, might be so related, that the buffers would be thrown outward to a greater distance than the draw-bars, under the pulling strain.

It will be noted, that in the closing movement of the cars, the levers G and H operate together over the common fulcrum piece F;

while under the pulling strain on the couplers, the said levers operate together, over the independent fulcrums F and K.

Having regard to the buffing mechanism, it should be noted, that the knuckle joint connection between the buffer-rods and the continuous buffer plates, permits the parallelism of the equalizer and the buffer-plate, to be maintained under all conditions, regardless of the curvature of the track, or the resulting angle, at which the two cars may stand, with reference to each other. The buffer-plates of the two cars will be in contact throughout their entire surfaces; and the pressure on the two ends of the respective equalizers will be equal.

It is, of course obvious, that the intermediate lever mechanism, herein described, is applicable for equalizing purposes, regardless of the particular form of the coupling mechanism, or the particular form of the buffing mechanism. Any form of buffer, which is spring seated, and any form of the coupling mechanism, having spring-seated draw-bars, may be employed. It is apparent, for example, that the lever G might be applied to a single centrally located buffer, the equalizer, in that case, being dispensed with.

Referring to Fig. 1, L represents retaining lugs, the inner ends of which overlie the top of the sliding plate E<sup>3</sup>, and L' represents the standards, to support the platform railing.

What I claim and desire to secure by Letters Patent of the United States, is as follows;—

1. The combination with a buffing mechanism, and a coupling mechanism, of a pair of levers connecting the said parts, arranged to operate together over a common fulcrum, in the closing movement of the cars, to throw the draw-bars and the buffers, on each car, in opposite directions, until the strain is equalized, and to operate together over independent fulcrums, in the pulling strain on the couplers, to throw the buffers outward coincidently with the outward movement of the draw-bars, substantially as and for the purposes set forth.

2. The combination with a buffing mechanism and a coupling mechanism, of a lever mechanism connecting the said parts, consisting of the pair of fulcrum pieces F and K, fixed to the frame-work, the lever G, loosely pivoted at its lower end to the fulcrum-piece F, and connected at its upper end to the buffing mechanism, and the lever H, pivoted at its lower end to the draw-bar, pivotally connected to the lever G, at a point above the fulcrum-piece F, and fulcruming over the piece F, in the closing movement of the cars, and arranged to fulcrum against the piece K, at its upper end, under the pulling strain on the draw-bar—substantially as and for the purposes set forth.

3. The combination with the draw-bar D, of the buffer-mechanism, consisting of the equalizer E, the spring-seated buffer-rods E', and the continuous buffer-plate E<sup>2</sup>, connected  
5 to the said rods by the knuckle joints e, and the intermediate lever-mechanism, connecting the said draw-bar and equalizer, consisting of the fixed fulcrum-pieces F and K, and the pivotally connected levers G and H, ar-

ranged and operating, substantially as described.

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

ALVIN CARR McCORD.

Witnesses:

JOHN F. KEHOE,  
CHAS. H. KING.