

(No Model.)

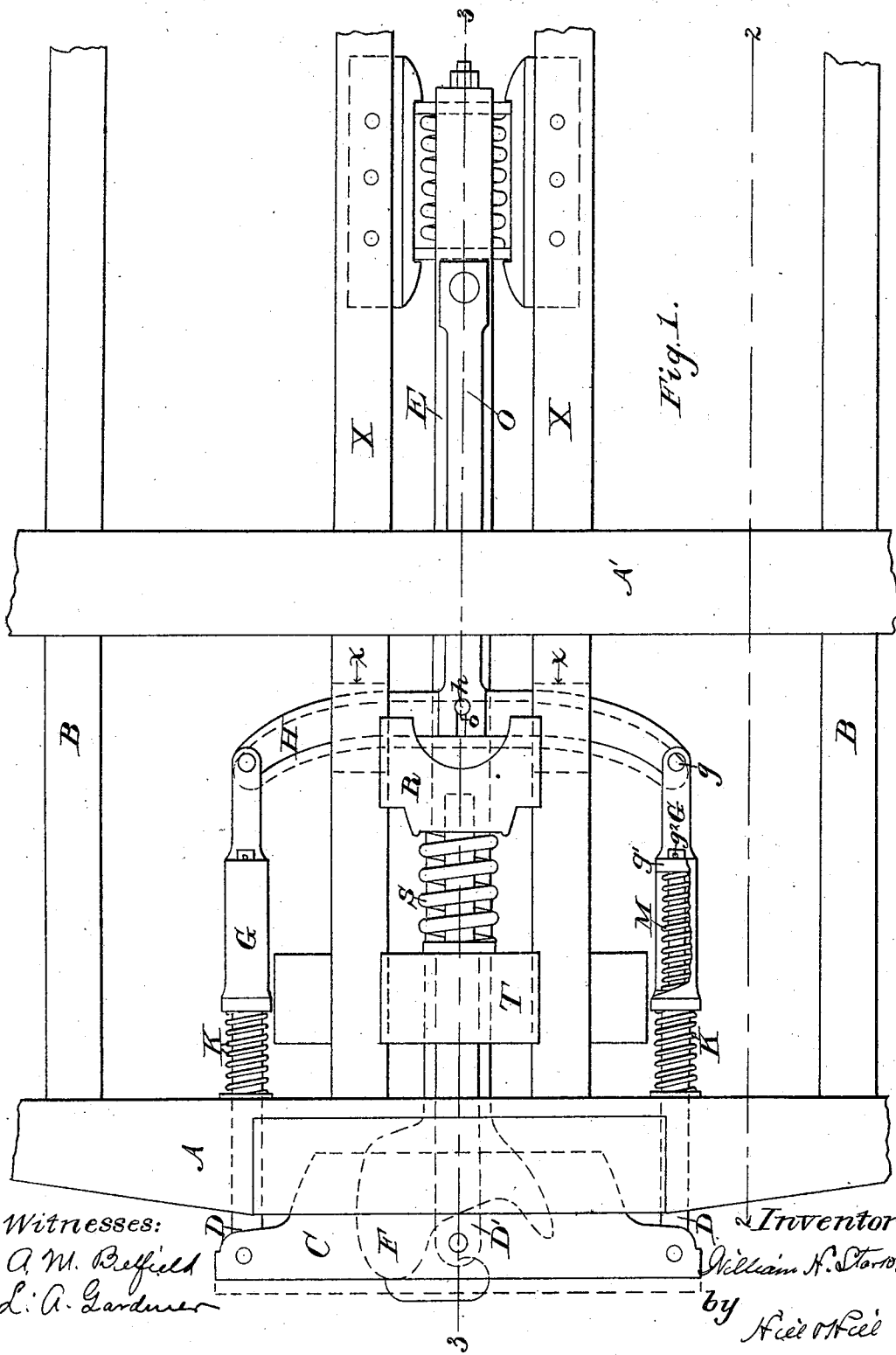
3 Sheets—Sheet 1.

W. H. STARK.

CONTINUOUS CAR PLATFORM AND BUFFER.

No. 552,452.

Patented Dec. 31, 1895.



Witnesses:

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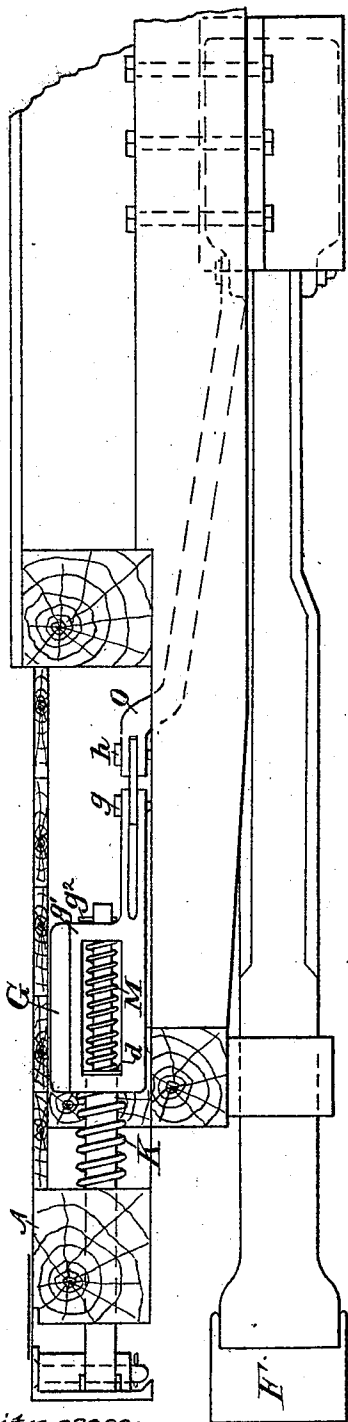


Fig. 2.

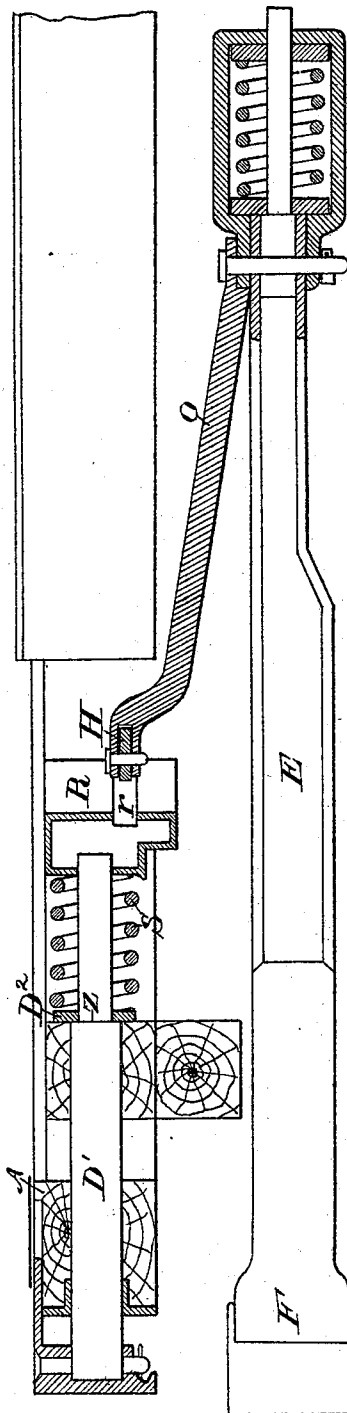


Fig. 3.

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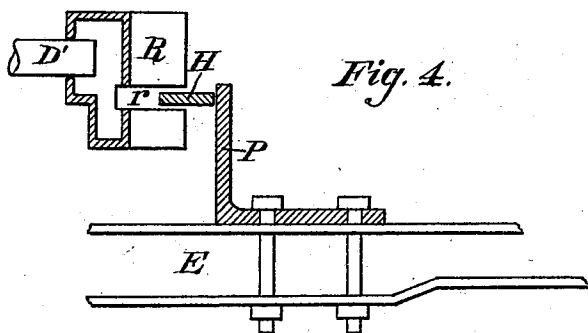
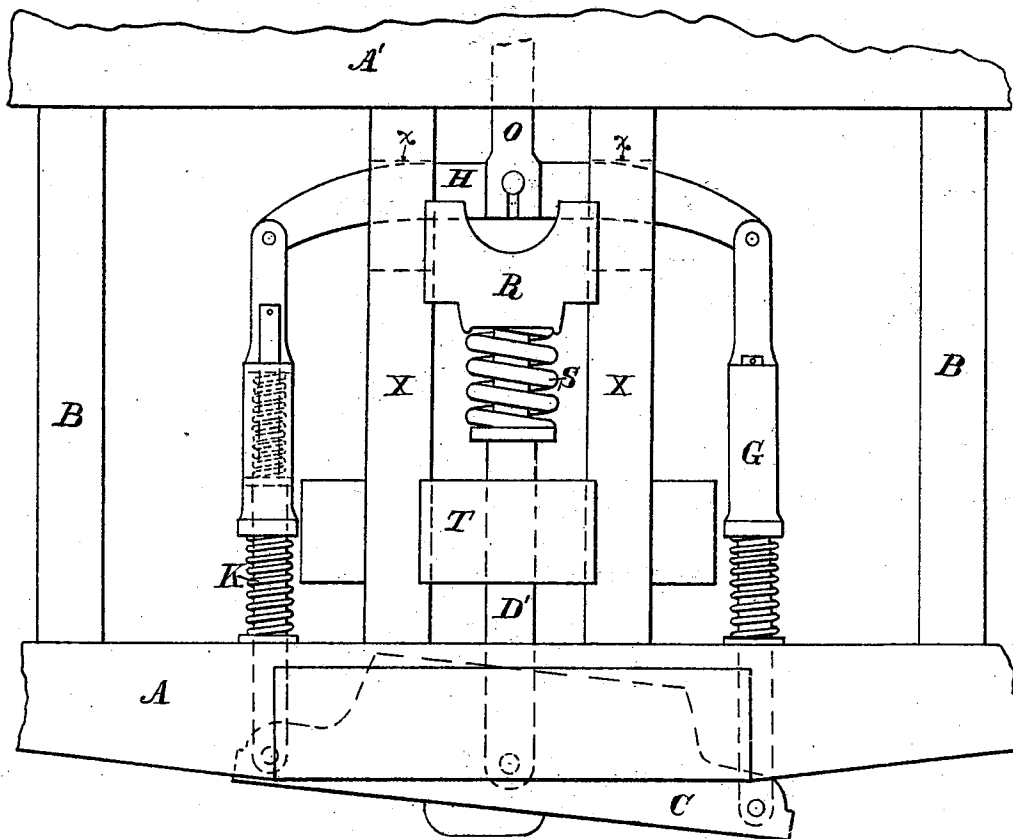


Fig. 4.

Fig. 5.



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UNITED STATES PATENT OFFICE.

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CONTINUOUS CAR PLATFORM AND BUFFER.

SPECIFICATION forming part of Letters Patent No. 552,452, dated December 31, 1895.

Application filed September 14, 1895. Serial No. 562,487. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. STARK, a citizen of the United States of America, residing at Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in Continuous Car Platforms and Buffers, of which the following is a description.

Referring to the accompanying drawings, wherein like reference-letters indicate like or corresponding parts, Figure 1 is a top plan of my improved platform and buffer with parts broken away to show the construction. Fig. 2 is a vertical section of the same in line 2 2 of Fig. 1. Fig. 3 is a similar section in line 3 3 of Fig. 1. Fig. 4 is a similar section, taken in the same line, of a slightly-modified form; and Fig. 5 is a top plan showing my invention as in operation when the cars are on a curve.

In connecting passenger and similar cars it is now common to use spring-buffers to keep the cars in constant yielding contact and thus prevent the jerking and violent impact by reason of the lost motion caused by the longitudinal movement of the spring draw-bar. In the more improved cars these buffers are connected by a platform which is constructed to telescope or move upon the car-platform proper. The two platforms, which I shall term "buffer-platforms," thus meeting form a continuous platform between cars, there being no open space through which a careless person can step and be injured. My invention relates to this class of continuous platforms and buffers; and it consists in the improved construction, arrangement and combination of parts herein described and shown, and more particularly set forth in the claims.

In the drawings, A represents the end sill of the car-platform, and A' the end sill of the car-body.

B B are the outside timbers of the car-platform.

C is the buffer-platform supported on the spring buffer-bars D D D', and with the similar buffer-platform on the adjacent car forms a continuous platform between the two. The resiliency of the spring-buffers tends to keep the buffer-platforms constantly in contact, and thus permits no open space in the floor

of the passage from car to car. Thus far the construction is common and well known.

E is the draw-bar and F the coupling device upon the same. The draw-bar is provided with the usual spring connections to reduce the shocks in stopping and starting cars.

The buffer-bars D D are supported by means of passing loosely through the platform-sill A, and thence extending loosely through the spring-pocket G, in such a manner as to be longitudinally movable through both. The pockets G are supported upon the ends of the buffer-bars, and are connected at g to a cross-bar H, which is in turn pivotally connected at h to the bar O, or its equivalent, connecting with the draw-bar E. The cross-bar H may be supported in position in any preferred manner—as, for example, by being positioned in a horizontal groove in the block R, Fig. 3. As thus arranged, the forward movement of the bar H is limited only by the extent the draw-bar E may move in that direction, while the backward movement is preferably limited by shoulders in timbers x x. (See dotted lines x x, Figs. 1 and 5.) When the bar H has reached its backward limit, the push-bar O may still continue its backward movement with the draw-bar E, by reason of the slot o in the end of the same allowing it to move backward independently of the bar H.

A spring K is arranged between the sill A and the ends of the spring-pockets G, which tends to normally hold said pockets at their inner or backward limit and also to hold the buffer-platform C parallel to the end of the car. A second spring M is arranged within the pocket G between a shoulder d of the buffer-bars and the end g' of the pocket G. The ends of the buffer-bars extend through the said pocket and are provided with keys g² or equivalent means to prevent the separation of the parts and suitably connect them.

The mode of operation is as follows: As the draw-bar E is pulled outwardly, the motion is transmitted by means of the intermediate connection or bar O to the transverse bar H, and in turn to the pockets G G. The springs M are compressed between the shoulder d of the buffer-bars and the end g' of the pockets G, and the buffers are thus pressed resiliently forward, the longitudinal movement of the bars

D in the pockets G permitting such movement. The springs K, between the sill A and the pockets G, are compressed by the direct force of the draw-bar E, and tend to return the said pockets G to their first position. When the draw-bar E is permitted to move backward again the springs K force the pockets G back, and the bars D, by reason of the cross-pin or key g^2 , or its equivalent, are carried with them, thus returning the platform C to its original position. It will thus be seen that the outward movement of the buffers D and the platform C is regulated by one set of springs M, while the inner or return movement of the same is governed by another set of springs K. This arrangement and combination makes the action of the buffers and platform C entirely automatic and at the same time easy and positive in its action. Neither spring in any way works against the other, but each is independent in its action.

In practice I prefer to also employ a central buffer D', so arranged as to receive the greater part of the shock when two cars come violently together. For this purpose the buffer D' extends loosely through the sill A and fixed block T into the block R. The blocks T and R are supported between the timbers X X. Between said blocks is arranged a spring S, one end of which rests against the loose collar D² and the other against the block R. The bar D' is preferably shouldered, as shown at z. The operation is apparent. When two cars come violently together the buffer D' is pushed backward. The shoulder z presses against the collar D² and thus compresses the spring S. The shock is thus cushioned. If the buffer D' is carried outward by the other buffers and the platform C, it slips loosely through the collar D² and interposes no obstacle.

Fig. 4 shows a slightly-modified form of transmitting the forward movement of the draw-bar E to the cross-bar H. In this case a bracket P is secured to the draw-bar, and when moved forward simply presses the bar H forward also, and when it is moved backward the bar H is returned to its normal position by the action of the springs K. If preferred, however, the connection may be made as is shown in the other figures.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A continuous platform and spring buffer consisting of the following elements in combination: buffer-bars so supported by the car as to be longitudinally movable thereon, a platform supported upon the outer ends of the buffer-bars, blocks forming spring pockets mounted upon the inner ends of the buffer-bars in such a manner that the bars are longitudinally movable therein, means upon the inner ends of the buffer-bars to limit their outward movement within the pockets, springs located between the buffer-bar supports and the pockets, tending to normally force the

pockets to their inner limit, other springs within the pockets and arranged to force the buffer-bars outward when the pockets are forced outward and means for transferring the outward longitudinal movement of the car draw-bar to the spring pockets, whereby when the draw-bar is pulled outward the buffers and platform are pressed resiliently outward by one set of springs and when the draw-bar returns to its normal position the platform and buffers are returned to their normal position by the action of another set of springs.

2. A continuous platform and spring buffer consisting of the following elements in combination: buffer-bars so supported by the car as to be longitudinally movable thereon, a platform supported upon the outer ends of the buffer-bars, blocks forming spring pockets mounted upon the inner ends of the buffer-bars in such a manner that the bars are longitudinally movable therein, means upon the inner ends of the buffer-bars to limit their outward movement within the pockets, springs located between the buffer-bar supports and the pockets, tending to normally force the pockets to their inner limit, other springs within the pockets and arranged to force the buffer-bars outward when the pockets are forced outward, a transverse bar connecting the spring pockets together, and means for transmitting the outward longitudinal movement of the draw-bar to the said transverse bar, whereby when the draw-bar is pulled outward the buffers and platform are pressed resiliently outward by one set of springs and when the draw-bar returns to its normal position the platform and buffers are returned to their normal position by the action of another set of springs, substantially as described.

3. A continuous platform and spring buffer consisting of the following elements in combination: buffer-bars so supported by the car as to be longitudinally movable thereon, a platform supported upon the outer ends of the buffer-bars, blocks forming spring pockets mounted upon the inner ends of the buffer-bars in such a manner that the bars are longitudinally movable therein, means upon the inner ends of the buffer-bars to limit their outward movement within the pockets, springs located between the buffer-bar supports and the pockets, tending to normally force the pockets to their inner limit, other springs within the pockets and arranged to force the buffer-bars outward when the pockets are forced outward, a transverse bar connecting the spring pockets together, and a push-bar, connecting said transverse bar to the draw-bar, whereby when the draw-bar is pulled outward the buffers and platform are pressed resiliently outward by one set of springs and when the draw-bar returns to its normal position the platform and buffers are returned to their normal position by the action of another set of springs, substantially as described.

4. A continuous platform and spring buffer

consisting of the following elements in combination: buffer-bars so supported by the car as to be longitudinally movable thereon, a platform supported upon the outer ends of the buffer-bars, blocks forming spring pockets mounted upon the inner ends of the buffer-bars in such a manner that the bars are longitudinally movable therein, means upon the inner ends of the buffer-bars to limit their outward movement within the pockets, springs located between the buffer-bar supports and the pockets, tending to normally force the pockets to their inner limit, other springs within the pockets and arranged to force the buffer-bars outward when the pockets are forced outward, a transverse bar connecting the spring pockets together, means for limiting the backward movement of said transverse bar, a push-bar connecting said transverse bar to the draw-bar, and a loose connection between said push-bar and the transverse bar, whereby the push-bar is allowed a slight further backward movement after the transverse bar has reached its inner limit, substantially as described.

5. A continuous platform and spring buffer consisting of the following elements in combination: buffer-bars so supported by the car as to be longitudinally movable thereon, a platform supported upon the outer ends of the buffer-bars, blocks forming spring pockets mounted upon the inner ends of the buffer-bars in such a manner that the bars are longitudinally movable therein, means upon the inner ends of the buffer-bars to limit their outward movement within the pockets, springs located between the buffer-bar supports and the pockets, tending to normally force the pockets to their inner limit, other springs within the pockets and arranged to force the buffer-bars outward when the pockets are forced outward, a transverse bar connecting

the spring pockets together, means for limiting the backward movement of said transverse bar, and a shoulder or bracket secured to the draw-bar and adapted in its forward movement to come in contact with and push the transverse bar forward, but in its backward movement to release said bar that it may return to its former position, substantially as described.

6. A continuous platform and spring buffer consisting of the following elements in combination: buffer-bars so supported by the car as to be longitudinally movable thereon, a platform supported upon the outer ends of the buffer-bars, blocks forming spring pockets mounted upon the inner ends of the buffer-bars in such a manner that the bars are longitudinally movable therein, means upon the inner ends of the buffer-bars to limit their outward movement within the pockets, springs located between the buffer-bar supports and the pockets, tending to normally force the pockets to their inner limit, other springs within the pockets and arranged to force the buffer-bars outward when the pockets are forced outward, a transverse bar connecting the spring pockets together, means for limiting the backward movement of said transverse bar, a shoulder or bracket secured to the draw-bar and adapted in its forward movement to come in contact with and push the transverse bar forward, but in its backward movement to release said bar that it may return to its former position, and an independent central buffer arranged to receive the greater part of the shock when two cars are brought violently together, substantially as described.

WILLIAM H. STARK.

Witnesses:

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