

No. 711,646.

Patented Oct. 21, 1902.

W. F. RICHARDS.
BUFFER FOR RAILWAY CARS.

(Application filed Mar. 10, 1902.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

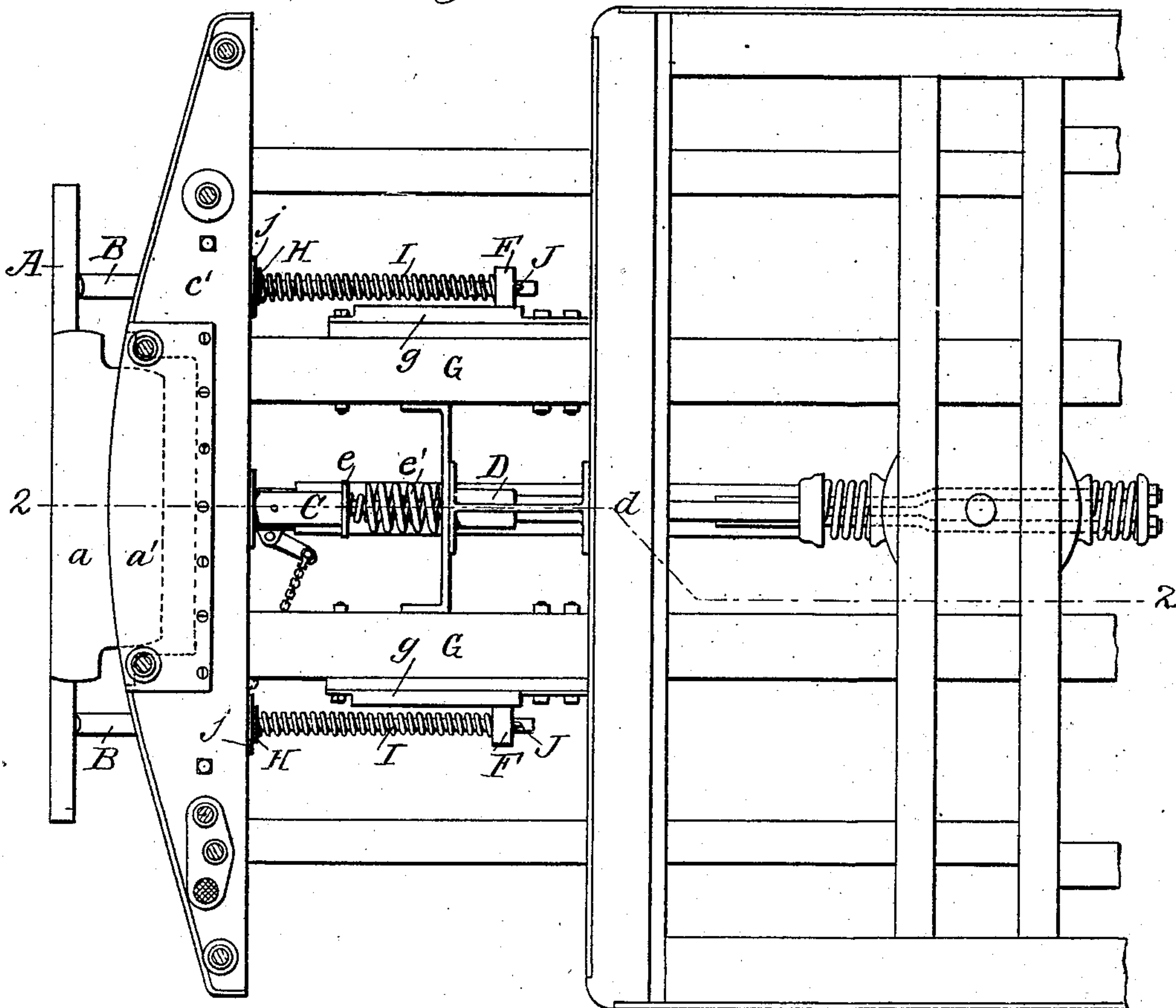
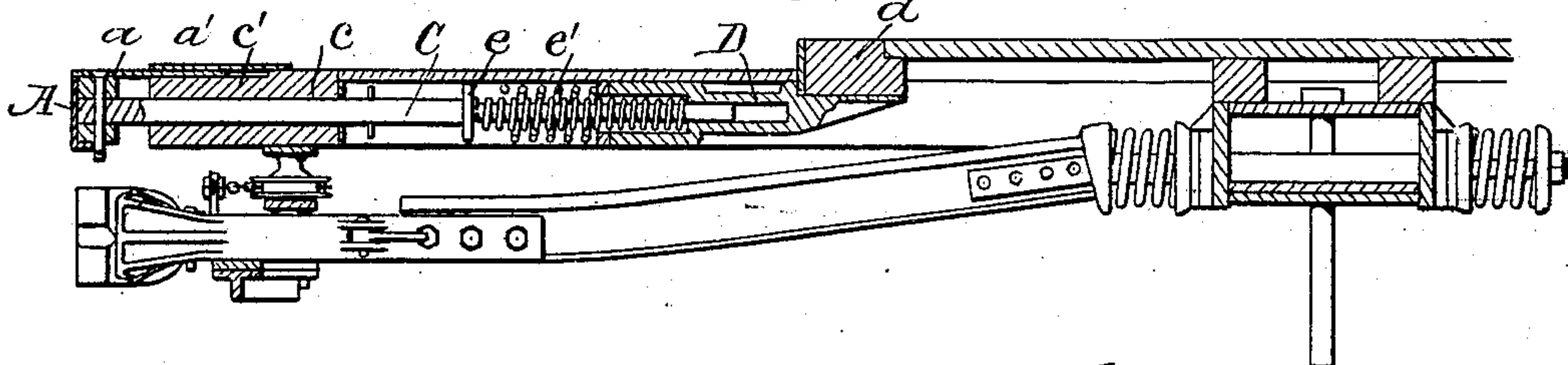


Fig. 2.



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Fig. 3.

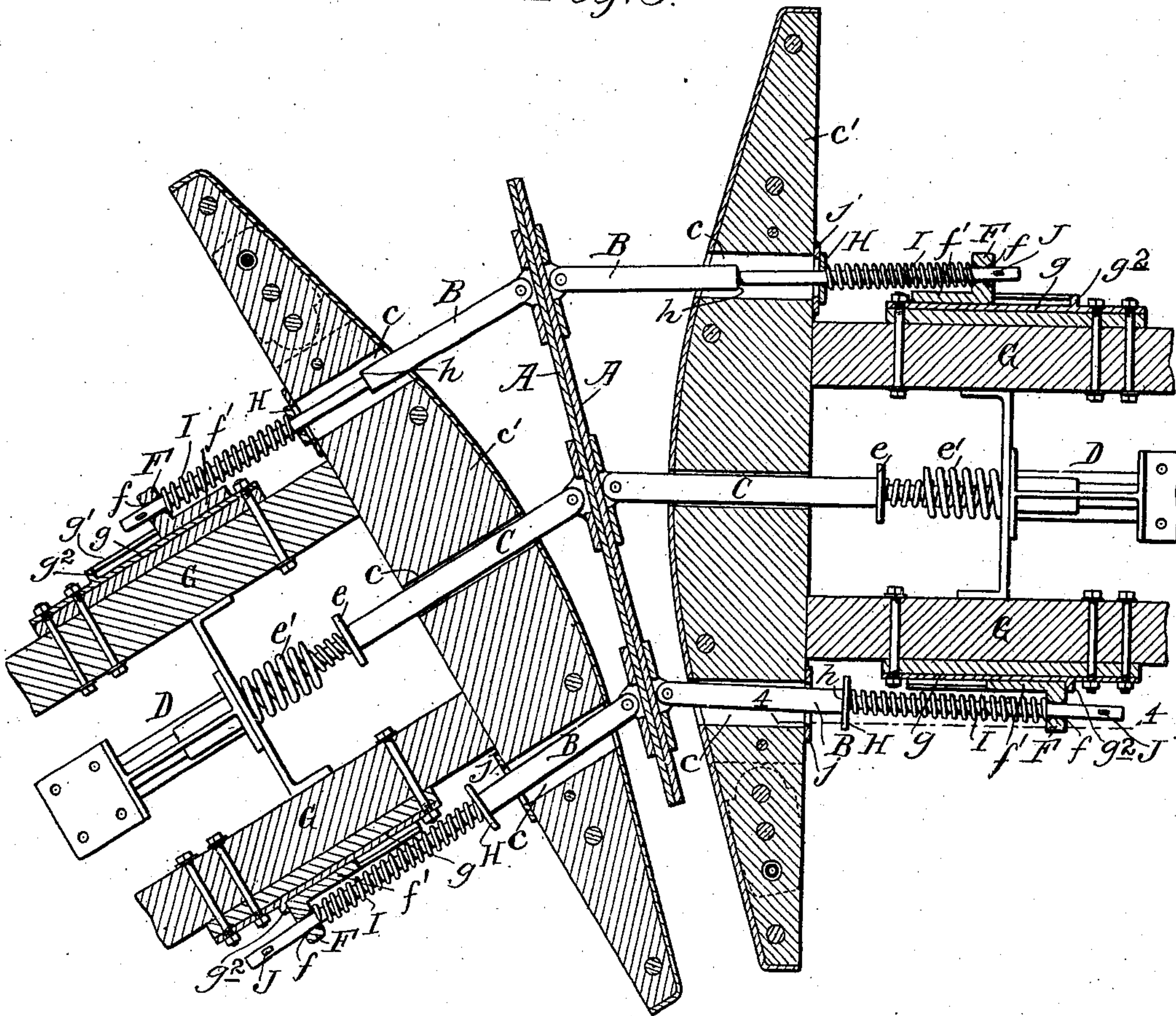


Fig. 4.

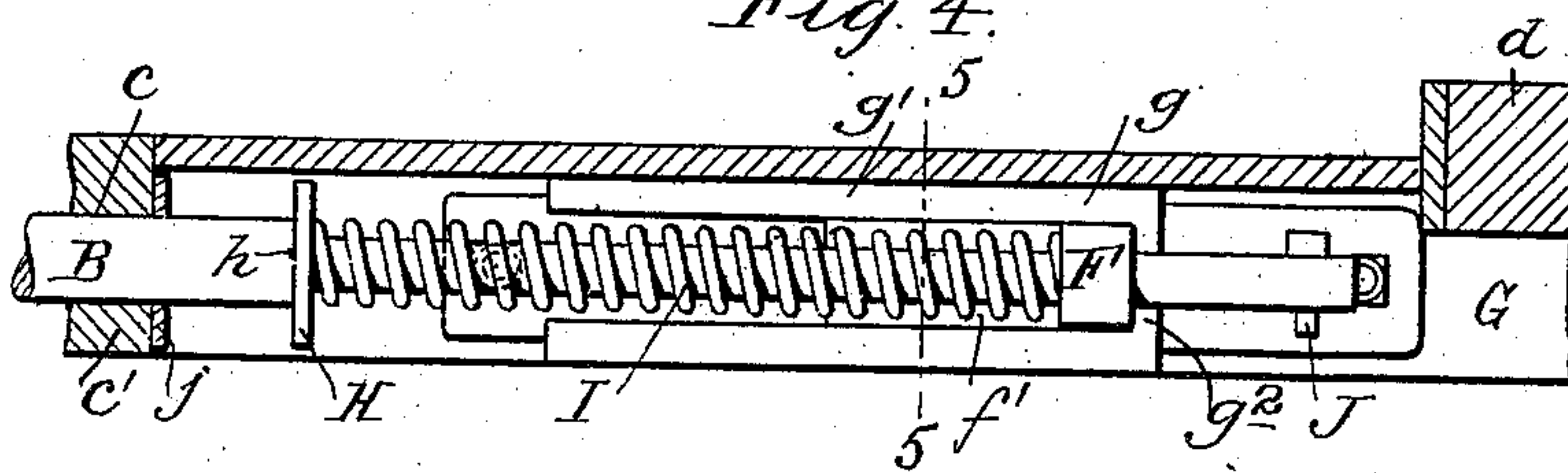
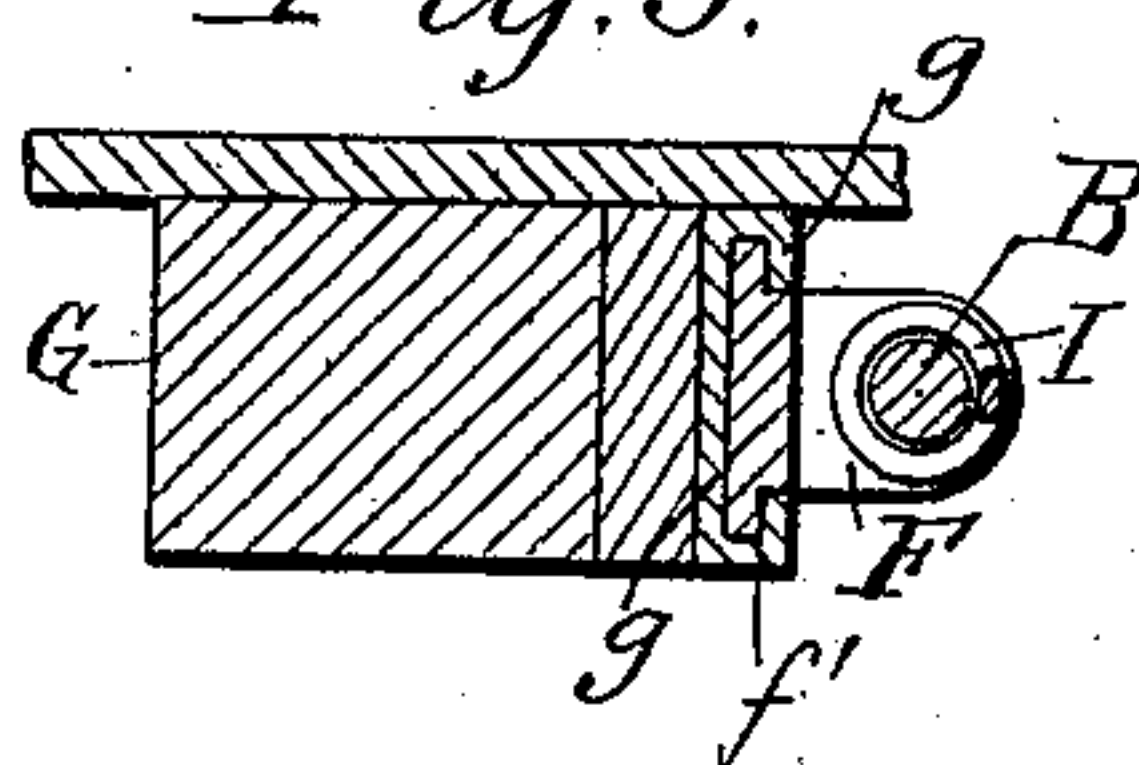


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLARD F. RICHARDS, OF BUFFALO, NEW YORK, ASSIGNOR TO GOULD COUPLER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF WEST VIRGINIA.

BUFFER FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 711,646, dated October 21, 1902.

Application filed March 10, 1902. Serial No. 97,390. (No model.)

To all whom it may concern:

Be it known that I, WILLARD F. RICHARDS, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Buffers for Railway-Cars, of which the following is a specification.

This invention relates to a railway-car buffer of the type disclosed in my United States Letters Patent No. 495,061, dated April 11, 1893, in which the yielding transverse buffer plate or head is mounted so as to permit it to assume the necessary angle to hold the plate or head in contact throughout its transverse length with the corresponding buffer plate or head of another car when rounding curves.

In cars which are operated on roads having very abrupt curves or bends it is necessary in order to maintain the contact of adjacent buffers throughout their transverse length in rounding the curves to allow a greater angular movement of the buffers than is permitted by the construction described in my said patent. It is desirable to retain the same general construction of the buffer, and to do this and get the extended angular movement the side-righting springs of the buffer must be lengthened. The springs in the patented buffer could not be lengthened sufficiently to allow the necessary angular movement of the buffer without changing the car construction or cutting the end sill, neither of which is practical.

The object of the present invention is to produce a buffer of the same general type as that of my said patent which will have a greater angular movement, which is of simple and desirable construction, and which will not necessitate any change in the car construction.

In the accompanying drawings, consisting of two sheets, Figure 1 is a plan view of a buffer embodying the invention and showing the same applied to the car-platform frame. Fig. 2 is a central longitudinal section on the line 2 2, Fig. 1. Fig. 3 is a horizontal section showing the cooperating buffers on the adjacent ends of two cars in their angular position. Fig. 4 is an enlarged sectional elevation on the line 4 4, Fig. 3, showing one of

the side buffer stems and springs. Fig. 5 is an enlarged section through the buffer-stem and spring buffer-block on line 5 5, Fig. 4.

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

A represents a buffer plate or head, which, as usual, is arranged transversely in front of the platform and sill and carried by side stems B B and a center stem C.

α represents the sliding thrust hold-plate, which is fixed to the buffer-plate and slides beneath the fixed foot-plate α' . Each of the stems is pivotally connected at its front end to the buffer-plate and passes rearwardly through an opening c , provided therefor in the platform end sill c' . The rear end of the central stem slides in a guide-bracket or the like D, rigidly secured to the car or platform frame and preferably, as shown, abutting against the end sill d of the car. Between the guide-bracket and a shoulder or enlargement e on the central stem are the usual light and heavy buffer-springs e' , which surround the stem. The rear end of each side stem passes loosely through an opening f in a sliding spring-abutment or block F, which is provided with an extended base or foot f' . The stem can slide through and also has a lateral or tilting movement in the opening f . The foot of the abutment-block extends forwardly beside the side stem and is mounted to slide back and forth on the adjacent longitudinal sill G of the car. In the construction shown in the drawings a guide-plate g is secured, as by bolts, to the outer face of the longitudinal sill and provided with overhanging longitudinal flanges g' , between which the extended base f' of the abutment-block engages. The guide-plate for the sliding abutment is provided at its rear portion with a stop g^2 , against which the sliding abutment-block is adapted to abut and which limits the rearward movement of the latter. The rear portions of the side stems are preferably reduced, so as to provide shoulders h on the stems, and on the reduced portions of the stems slide follower-plates H, which are adapted to abut against the shoulders h .

I represents side buffer-springs, one of which surrounds the reduced portion of each side

stem between the follower-plate H thereon and the sliding abutment-block F. Each side stem is provided in rear of the abutment-block with a pin or the like J, which is adapted to engage the rear side of the abutment-block and slide the latter forwardly when the stem is moved forwardly. The springs in the normal position of the buffer (shown in Fig. 1) force the follower-plates forwardly against the platform end sill and force the sliding abutment-blocks rearwardly against the stops g^2 on the guide-plates. The sliding abutment-blocks being held from further rearward movement by the stops and the follower-plates being held from further movement on the stems by the shoulders h the stems are pushed forwardly until the follower-plates are arrested by the platform end sill and the buffer-plate is yieldingly held in its normal position. When the buffer-plate is moved into an inclined or abnormal position—as indicated, for instance, in Fig. 3—one of the side stems is permitted to slide rearwardly in the opening in the abutment-block, and the spring surrounding this stem is compressed between the follower-plate H, which is carried rearwardly by the shoulder h on the stem and the abutment-block. The abutment-block for the opposite side stem is moved forward by the engagement of the pin J on the stem with the rear side of the abutment-block, and the spring surrounding this stem is compressed between the spring-block and the follower-plate H, which is prevented from moving forward with the stem by reason of its contact with the rear side of the platform end sill. Preferably plates j are secured to the rear face of the platform end sill to serve as stops for the follower-plates H. When the buffer-plate is moved to an inclined position in either direction, both of the side buffer-springs are compressed, one by the rearward movement of its stem and the other by the forward movement of its stem, so that both springs are effective in righting the buffer-plate or turning the same to its normal transverse position.

The described construction and arrangement of the sliding abutment-plates gives a strong desirable construction and enables the use of longer side springs where the same or even less space than usual is afforded between the platform and end sills. Owing to the increased length of the springs and the loose engagement of the side stems in the abut-

ment-blocks a much greater angular movement of the buffer is made possible.

I claim as my invention—

1. The combination of a buffer, stems pivoted thereto at opposite sides of its center, an abutment slidably mounted on a stationary part beside each stem and provided with an outwardly-extending portion through which the stem passes, a follower slidably mounted on each stem, a spring surrounding each stem between the follower and said abutment, means whereby said followers are caused to move with the stems when the latter are moved in one direction and the abutments are caused to move with the stems when the latter are moved in the opposite direction, and stops for said followers and for said abutments, substantially as set forth.

2. The combination of a buffer, stems pivotally connected to said buffer at opposite sides of its center and passing loosely through openings in the platform end sill, fixed guides, spring-abutments provided with forwardly-extending portions slidably mounted on said guides, a follower slidably mounted on each stem and adapted to abut against said platform end sill, stops for said slidable abutments, and a spring surrounding each of said stems between said follower and said abutment, substantially as set forth.

3. The combination with a platform-frame comprising longitudinal sills and an end sill, of a buffer, stems pivoted to said buffer at opposite sides of its center and extending rearwardly through openings in said end sill, said stems having reduced rear portions, guides on said longitudinal sills, abutments provided with forwardly-extending portions slidably mounted on said guides and having openings through which the reduced portions of said stems loosely pass, pins or the like secured to said stems in rear of said abutments, stops for limiting the rearward movement of said abutments, follower-plates slidably mounted on the reduced portions of said stems and adapted to abut against said end sill, and a spring surrounding the reduced portion of each stem between the follower-plate and said abutment, substantially as set forth.

Witness my hand this 25th day of February, 1902.

WILLARD F. RICHARDS.

Witnesses:

JNO. J. BONNER,

CLAUDIA M. BENTLEY.