

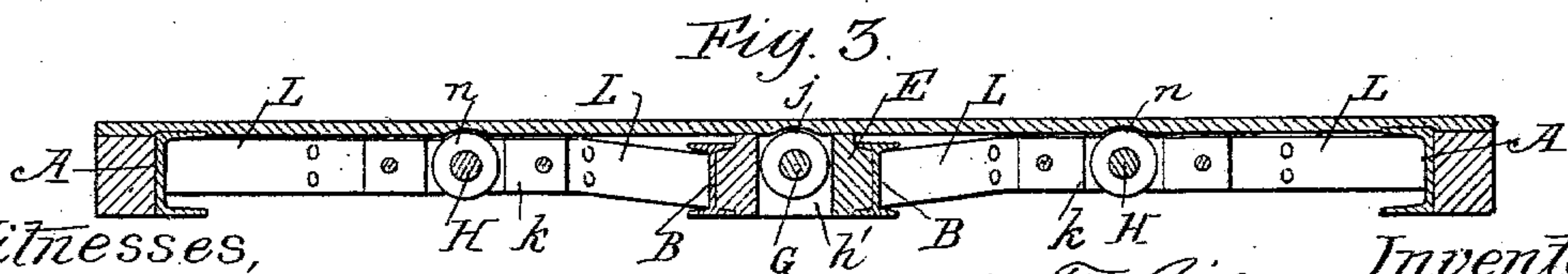
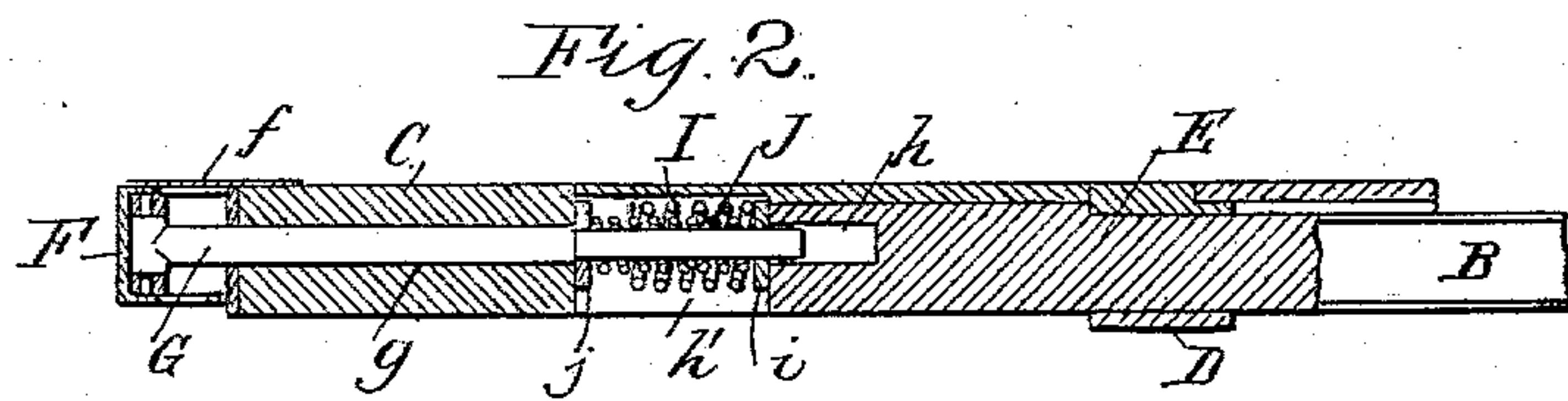
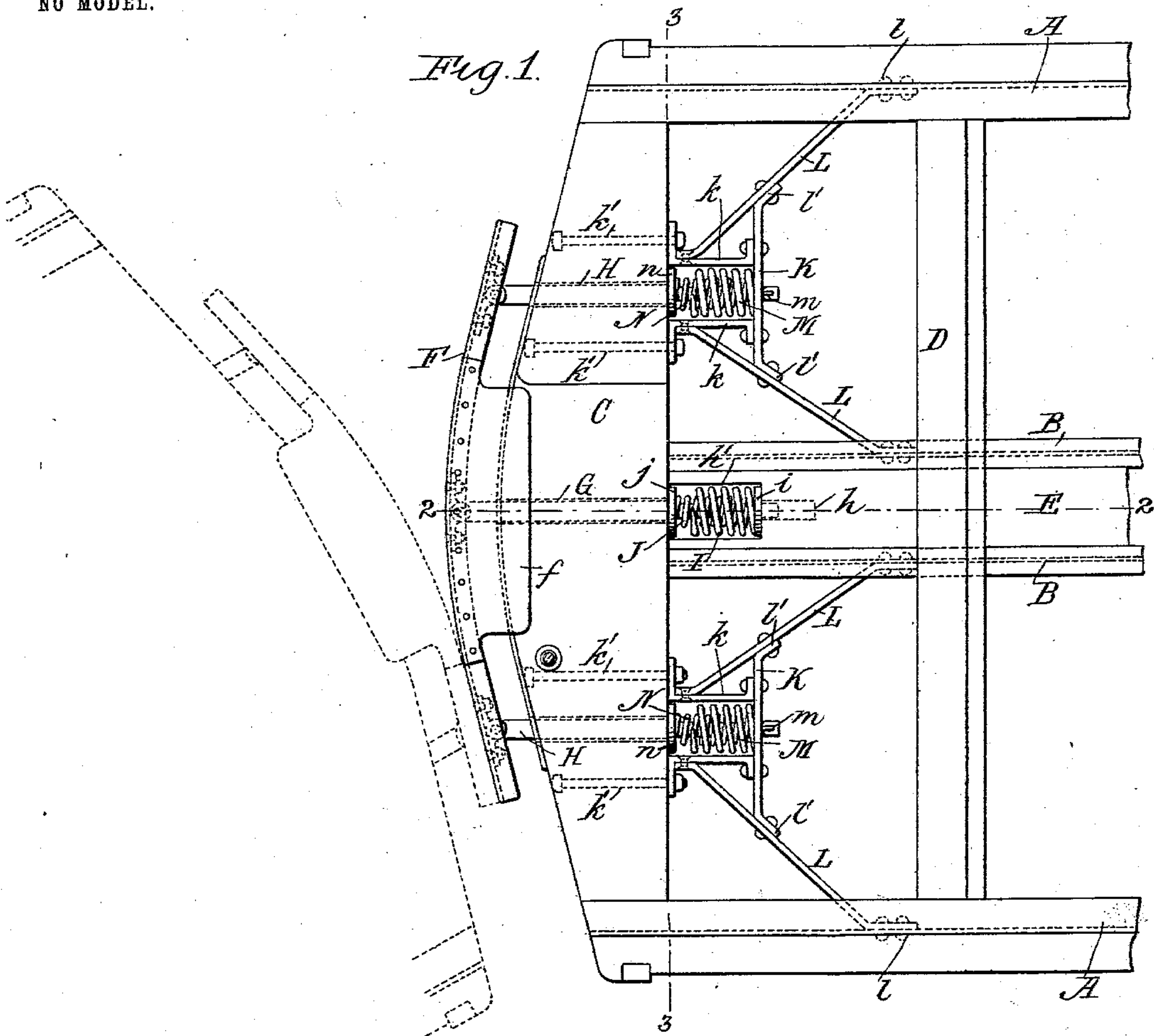
No. 745,667.

PATENTED DEC. 1, 1903.

W. F. RICHARDS.
CAR BUFFER.

APPLICATION FILED APR. 17, 1902.

NO MODEL.



Witnesses,
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UNITED STATES PATENT OFFICE.

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CAR-BUFFER.

SPECIFICATION forming part of Letters Patent No. 745,667, dated December 1, 1903.

Application filed April 17, 1902. Serial No. 103,279. (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 Car-Buffers, of which the following is a specification.

This invention relates to a railway-car buffer or yielding platform extension which forms with the corresponding extension of an adjoining car a continuous platform between two coupled cars. The buffer is usually pivotally supported, so as to be capable of assuming an angular position relative to the car and maintaining contact throughout its length with the opposing buffer, and is provided with a central heavy spring for opposing any violent shocks received by the buffer and lighter springs at each side of the buffer for righting the latter or returning it to and holding it in a normal transverse position after it has been moved to an angular position. In buffers of this construction long righting-springs are required to permit the necessary angular movement of the buffer when the cars are rounding or are coupled or uncoupled on curves, and such buffers are not practical in some cars, the construction of which does not afford space for long righting-springs, nor in cars which are operated on roads having such sharp curves that when two cars are coupled on a curve the thrust or shock acts in a direction at such a great angle to the position of the cars that the single central buffer-springs cannot properly resist or absorb the shock.

The object of the invention is to provide a simple, strong, and effective buffer mechanism which is free from the above-stated objections.

In the accompanying drawings, Figure 1 is a plan view of the end portion of the frame of a car provided with a buffer embodying the invention and showing by dotted lines the relative position of the buffer of an adjoining car when the cars are about to be coupled on a curve. Fig. 2 is a central longitudinal section on line 2 2, Fig. 1. Fig. 3 is a transverse section on line 3 3, Fig. 1.

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

A A represent the side sills; B B, the center or draft beams; C, the platform end sill which connects the ends of the side sills and draft-beams, and D a transverse sill or timber in rear of the platform end sill and connecting the longitudinal frame members. In the construction shown in the drawings the side sills and draft-beams are in the form of flanged metal beams or bars, and a longitudinal filling-timber E is arranged between the draft-beams and embraced by the flanges thereof.

F represents the buffer head or plate, which, as usual, is yieldingly supported in front of the platform end sill, and *f* represents the usual threshold-plate, which is secured to the top of the buffer-head and extends rearwardly over the platform end sill. The buffer-head is curved horizontally or has rearwardly-inclined ends, and the front face of the platform end sill is correspondingly curved or inclined at its ends, so that the buffer-head can move bodily toward the end sill. The buffer-head is supported by a central buffer bar or stem G and side buffer bars or stems H, arranged on opposite sides of the central stem. Each stem passes loosely through a hole *g* in the platform end sill and is pivoted at its front end to the buffer-head. The rear end of the central stem is preferably reduced and enters and is guided by a hole *h* in the filling-timber between the draft-beams. The filling-timber is provided with an opening or spring-pocket *h'* in rear of the platform end sill, and in this opening and surrounding the reduced portion of the central stem is the usual heavy buffer-spring I, which preferably bears at its end against a bearing-plate *i* in the spring-pocket. Also surrounding the reduced end of the stem within the buffer-spring is the usual light projecting spring J, which is longer than the buffer-spring and bears at its opposite ends against the bearing-plate *i* and a shoulder or collar *j* on the stem.

Each side stem is provided with a heavy buffer-spring and a lighter projecting or righting spring corresponding to the buffer and projecting springs for the central stem. The springs for each side stem are confined in a spring-pocket arranged in rear of the end sill and which is constructed as follows: K rep-

resents a transverse bar or piece which forms the rear side of the spring-pocket and the bearing-plate for the rear ends of the buffer and projecting springs. The rear piece is
 5 connected intermediate of its ends to the end sill by separated side bars or pieces *k*, which form the sides of the spring-pocket. As shown, the side pieces are provided at their front ends with lateral extensions attached
 10 to the end sill by bolts *k'* and at their rear ends with lateral extensions attached to the rear piece by rivets or the like. *L* represents inclined braces which are connected at their front ends by rivets or the like to the
 15 forward portions of the side pieces of the spring-pocket. The brace-bars diverge rearwardly, and the rear end of one is secured by rivets or the like *l* to the web of the adjacent side sill, while the rear end of the other is se-
 20 cured by rivets or the like to the web of the adjacent draft-beam. The brace-bars are secured intermediate of their ends by rivets or the like to the rearwardly-diverging ends *l'* of the rear piece *K* of the spring-pocket. The
 25 construction affords a simple and strong spring-pocket which transmits the buffing strains directly to the side sills and draft-beams through the inclined braces *L*.

The rear end of each side stem is preferably
 30 reduced and projects through a hole in the rear piece of the spring-pocket, being provided in rear of said piece with a pin or the like *m* to limit the forward movement of the buffer.

35 *M* and *N* represent the buffer and projecting or righting springs for each side stem. They surround the stem in the spring-pocket in a manner similar to the central springs, and the projecting spring, which is longer
 40 than the buffer-spring, abuts at its rear end against the rear piece of the pocket and at its forward end against a collar or shoulder *n* on the stem.

The light projecting springs normally hold
 45 the buffer-head forwardly in the position shown in Fig. 1, so that it can move in when the cars are coupled before the buffer-springs are brought into action. While the described manner of supporting the buffer-head enables
 50 it to swing somewhat or assume an angular position relative to the car, an extended angular movement is not necessary, owing to the curved shape of the buffer-head. When

the cars are coupled on a curve and bear the extreme angular position to each other in- 55 dicated in Fig. 1, the side springs take the greater part of the shock, and being nearly in line with the point of contact of the cars the buffer is not strained, as it would be if the central buffer-spring alone was employed, 60 and the spring action of the buffer is materially improved.

I claim as my invention—

1. The combination with a car-frame com- 65 prising an end sill having a curved outer face, and separated longitudinal beams, of a buffer-head which is curved to correspond to the curved outer face of the end sill, a central and side stems connected to said buffer-head and slidably mounted on said end sill, and buffer- 70 springs for said central and side stems arranged at the inner side of said end sill between said longitudinal beams, substantially as set forth.

2. The combination with a car-frame com- 75 prising draft-sills and side sills, of a buffer-head, stems connected to said buffer-head and slidably supported by the car-frame, a buffer-spring and a projecting spring for each stem, spring-pockets for said springs, and braces 80 for said spring-pockets secured to said draft-beams and side sills, substantially as set forth.

3. The combination with a car-frame, com- 85 prising an end sill, side sills and draft-beams, of a buffer-spring pocket secured to said end sill, and inclined braces secured to said spring-pocket and to the adjacent draft-beam and side sill, substantially as set forth.

4. The combination with a car-frame com- 90 prising an end sill, side sills and draft-beams, of a side buffer-spring pocket located between one of said draft-beams and one of said side sills and comprising side pieces secured to said end sill, a rear piece secured to said side 95 pieces and projecting beyond the same, and inclined braces secured to said rear and side pieces and one secured to said draft-beam and the other secured to said side sill, substantially as set forth.

Witness my hand this 12th day of April, 100 1902.

WILLARD F. RICHARDS.

Witnesses:

JNO. J. BONNER,
 C. M. BENTLEY.