

(No Model.)

W. F. RICHARDS.
CAR BUFFER.

No. 533,319.

Patented Jan. 29, 1895.

Fig. 3.

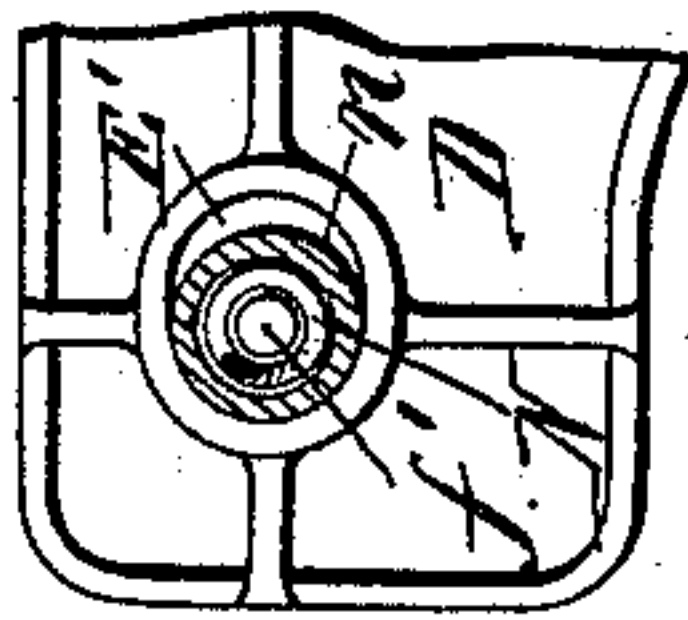


Fig. 1.

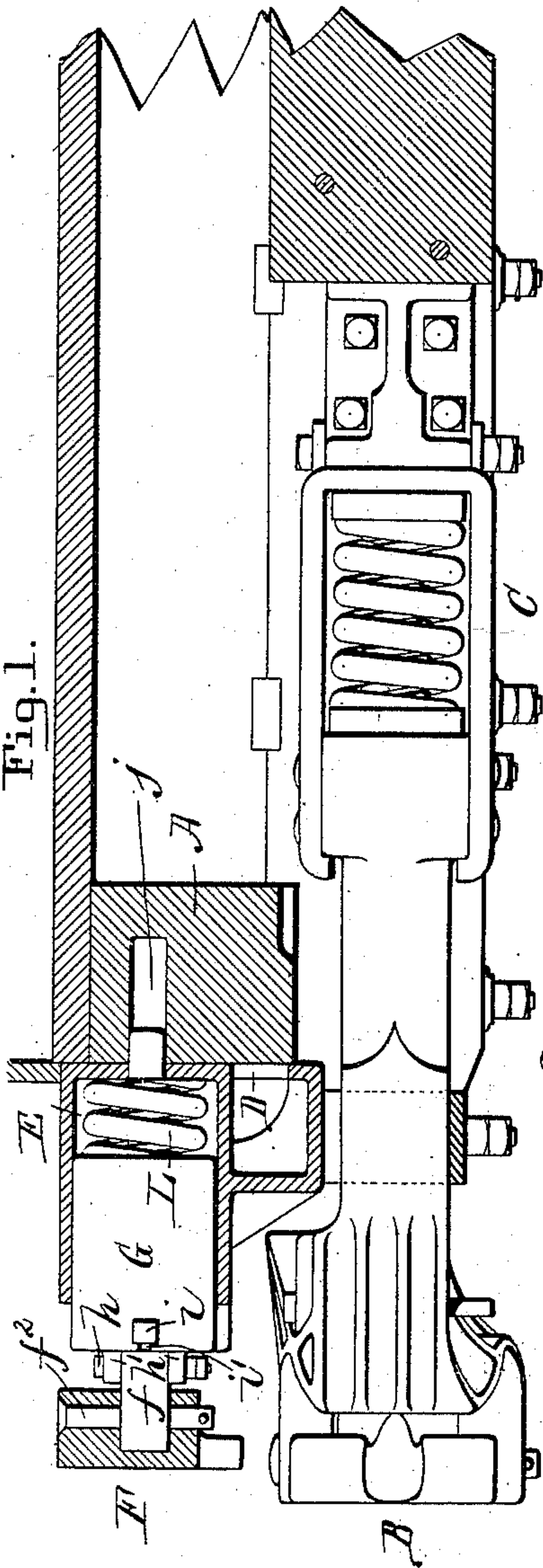
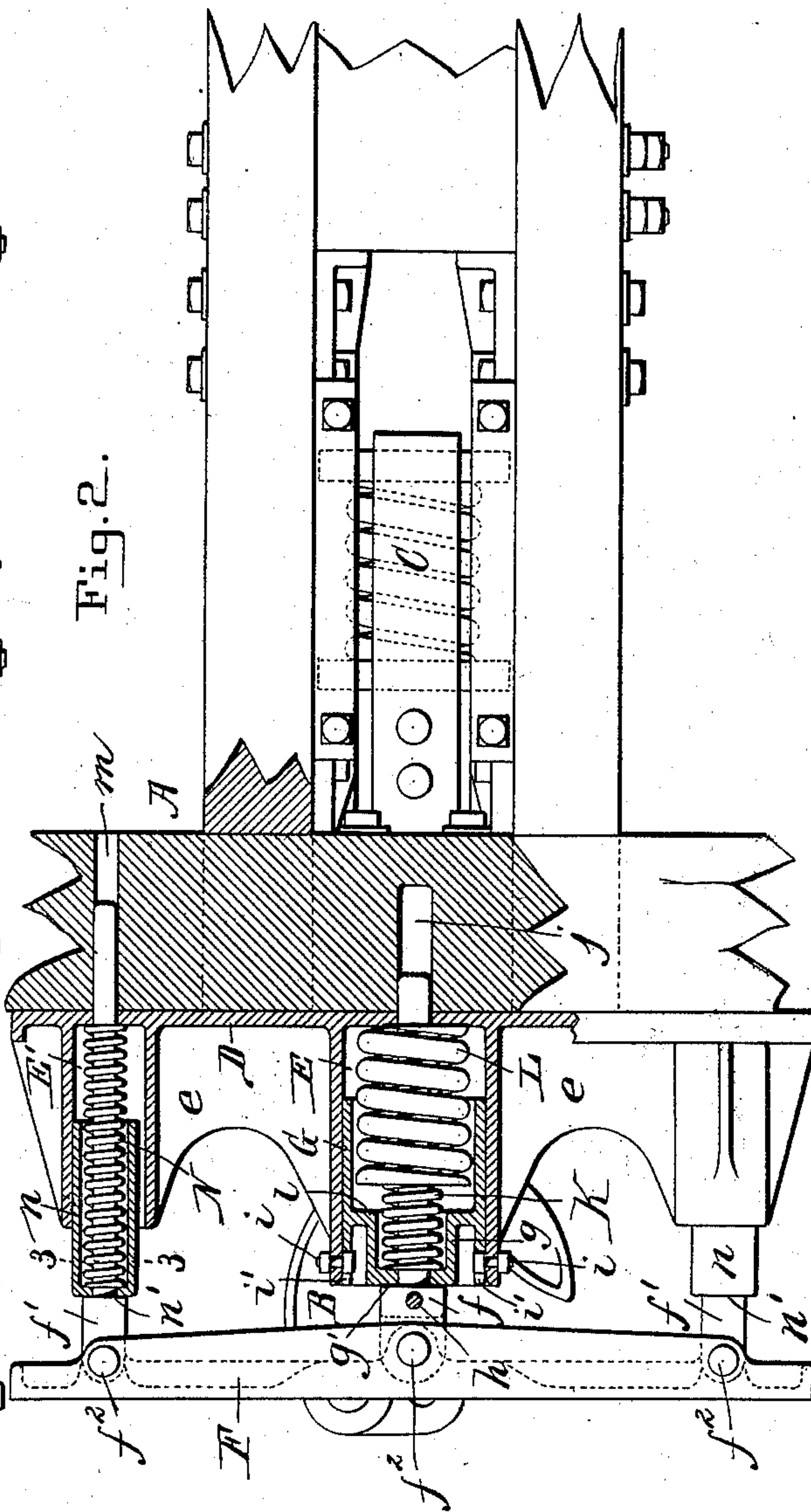


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLARD F. RICHARDS, OF BUFFALO, ASSIGNOR TO THE GOULD COUPLER COMPANY, OF NEW YORK, N. Y.

CAR-BUFFER.

SPECIFICATION forming part of Letters Patent No. 533,319, dated January 29, 1895.

Application filed June 29, 1894. Serial No. 516,120. (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 a new and useful Improvement in Car-Buffers, of which the following is a specification.

This invention relates to a car buffer designed more particularly for freight and cattle cars.

The object of my invention is to construct an efficient buffer of simple construction which is readily applied to an ordinary car.

In the accompanying drawings:—Figure 1 is a fragmentary sectional elevation of a freight car provided with my improved buffer. Fig. 2 is a top plan view thereof, partly in section. Fig. 3 is a fragmentary transverse section in line 3—3, Fig. 2.

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

A is the end sill of the car frame; B, the draw head, and C the draft gear, which parts may be of any common construction.

D is a transverse base plate or bracket secured to the end sill and having on its front side a central horizontal socket E and horizontal side sockets E' arranged on opposite sides of the central socket, all of said sockets projecting forwardly from the base plate and being connected by ribs or webs e.

F is the buffer or transverse buffer plate, which is carried by a central stem *f* and side stems *f'* passing through the central and side sockets E E', respectively. These stems are pivoted to the buffer at their outer ends by vertical pins or bolts *f*², so as to permit the buffer plate to oscillate or assume an angular position in rounding curves.

G is a hollow cylindrical follower sliding lengthwise in the central socket of the base plate and having within its front portion a pocket *g* which abuts with its bottom or closed end against a shoulder or enlargement *g'* formed on the front portion of the central stem *f*. The latter passes through an opening formed in the bottom of the follower pocket and is connected with the follower by a vertical pin or key *h* which passes through the stem and a pair of perforated horizontal ears *h'* projecting forwardly from the follower pocket,

above and below the stem. The outward movement of the follower is limited by radial pins or bolts *i* secured to the outer portion of the central socket and entering longitudinal slots *i'* formed in the adjacent end of the follower. The rear portion of the central stem passes through an opening in the rear end of the central socket and enters an opening or recess *j* formed in the end sill in line with said opening.

K represents a light, central extension spring which holds the buffer in its normal projected position and which resists any ordinary shocks received by the same. This spring surrounds the central buffer stem and bears at its front end against the bottom of the follower pocket *g* and at its rear end against the adjacent end of the central socket E.

L is a heavy buffer spring which surrounds the central extension spring and which is adapted to come into action when the buffer receives a heavy shock which overcomes the resistance of the light extension spring. This heavy buffer spring is arranged partly within the central socket E and partly within the hollow follower and its rear end abuts against the rear end of the central socket, while its front end is adapted to bear against the internal diaphragm or shoulder *l* which connects the pocket *g* with the follower.

The rear portions of the side stems *f'* pass through openings formed in the rear ends of the side sockets E' and enter recesses *m* formed in the end sill in line with said openings. Each of these side stems carries a pocket or sleeve *n* which abuts at its closed front end against a shoulder or enlargement *n'*, formed on the adjacent portion of the stem.

N N represent righting springs which are applied to the side stems between the closed ends of the pockets *n* and the rear ends of the side sockets E' and which tend to return the buffer plate to its normal position, parallel with the end of the car, after rounding a curve. The pockets *n* inclose the front portions of the righting springs and thereby prevent the latter from coming in contact with the outer ends of the side sockets and interfering with the movements of the side stems.

In order to permit of the requisite lateral play of the side stems, the side sockets are elongated horizontally, as shown in Fig. 3.

The central extension spring and the right-
5 ing springs are preferably so long that when the buffer is in normal contact with the buffer of an opposing car, these springs are slightly compressed, but not to such an extent as to interfere with the easy coupling
10 and uncoupling of the cars.

When the buffer receives an ordinary shock only the extension spring and the side springs are compressed by the inward movement of the central and side stems, but in case the
15 buffer receives a violent shock which overpowers such light springs, the diaphragm *l* of the follower strikes the front end of the heavy buffer spring and compresses the same, thereby easing the shock and also protecting the
20 draft gear from injury.

Upon removing the key or bolt *h*, the central and side stems *E E'* with the buffer attached thereto, may be withdrawn from the sockets of the base plate for making repairs,
25 without disturbing the base plate.

I claim as my invention—

1. In a car-buffer, the combination with the base plate or bracket secured to the end of the car and having a forwardly projecting socket,
30 of a follower guided in said socket, a buffer spring or springs arranged in said socket, and a buffer having a supporting stem attached to said follower, substantially as set forth.

2. In a car-buffer, the combination with the
35 base plate or bracket secured to the end of the car and having a forwardly projecting socket, of a follower guided in said socket and pro-

vided in its front portion with a reduced portion or pocket closed at its front end and forming a shoulder within the follower, a heavy
40 spring arranged in said socket and adapted to bear at its front end against the shoulder of the pocket, a light spring bearing against the closed front end of said pocket, and a buffer carried by said follower, substantially
45 as set forth.

3. In a car-buffer, the combination with a base plate or bracket secured to the end of the car and provided with a forwardly projecting
50 socket, of a follower guided in said socket and provided at its front end with perforated ears, a buffer having a supporting stem passing through said socket, a pin or key passing through the buffer stem and the perforated
55 ears of the follower, and a buffer spring or springs arranged in said socket, substantially as set forth.

4. In a car buffer, the combination with a base plate secured to the end of the car and having forwardly projecting central and side
60 sockets, of a follower arranged in the central socket and carrying a stem, a buffer pivoted centrally to said stem, springs arranged in said socket, side stems pivoted to the end portions
65 of the buffer and passing through said side sockets, and springs applied to said side stems and arranged in the side sockets, substantially as set forth.

Witness my hand this 29th day of May, 1894.

WILLARD F. RICHARDS.

Witnesses:

JNO. J. BONNER,
ELLA R. DEAN.