

W. RICKARDS, Jr.
 Buffer Head for Car Couplings.

No. 105,491.

Patented July 19, 1870.

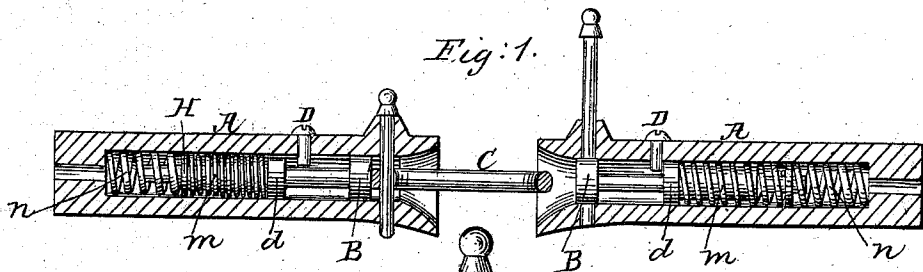


Fig: 1.

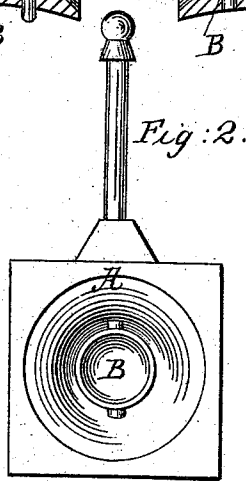


Fig: 2.



Fig. 3.

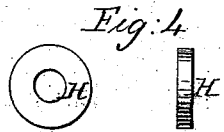


Fig. 4.

Witnesses:

Josh. A. Ellis
 Henry M. Miller

Inventor:

William Richards, Jr.

UNITED STATES PATENT OFFICE.

WILLIAM RICKARDS, JR., OF FRANKLIN, PENNSYLVANIA.

IMPROVEMENT IN BUFFER-HEADS FOR CAR-COUPERS.

Specification forming part of Letters Patent No. 105,491, dated July 19, 1870.

To all whom it may concern:

Be it known that I, WILLIAM RICKARDS, Jr., of Franklin, Venango county, Pennsylvania, have invented certain new and useful Improvements in Combined Spring-Buffers and Self-Couplers; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings and the letters of reference marked thereon.

The first part of my invention consists in the construction of the buffer-heads, which consist of the head, the stationary collar, which serves as a double stop, an increase, upon which the weaker spring is placed, and a shank for the movable collar to slide upon.

The second part of the invention consists in making the buffer-heads round, so that they can revolve freely in the cylindrical opening of the draw-head, whereby they are made to wear upon all parts of their surface equally.

Figure 1 is a section view of my invention. Fig. 2 is an end view of one of my couplers. Fig. 3 is a side elevation of my buffer-head. Fig. 4 represents the form and shape of the movable collar which separates the two springs.

Letter A represents the draw-heads, which have cylindrical openings enlarged at their front ends, extending through their centers. These openings, in which the buffer-heads play back and forth, are intended to be always circular in shape, so that the buffers will always wear equally on every side. Bare the buffers, formed as shown in Fig. 3, having their front ends shaped so as to be concave, as seen in Fig. 2, so that wherever the link C may strike them, as the cars come together, it will always be guided to the center of the head, and as these buffers are intended to revolve in their cylinders, not only will their peripheries, but the concave ends, be worn equally in every part. At a short distance back of the buffer-head there is formed a stationary collar, *d*, which is of equal size as the buffer-head, and which, together with the buffer-head, forms the stops, between which the screw or bolt D acts, so as to prevent the buffer from moving either too far back or forward. This screw or bolt may be placed in from the top, as shown, or may be placed in the sides, whichever may be desirable. In causing the buffers to move

back and forth there are two springs used—one of them so light that the force of a single man can move it back, and the second or rear one sufficiently heavy and strong to break the concussion or jar of the cars as they come together. Just back of the stationary collar *d* there is an enlargement, *i*, upon the shank of the buffer, smaller than the collar, and over which the front and weaker spring *m* is passed. This spring is intended to be much weaker than the rear one, so that a man can push the buffer-head back far enough to enable him to bolt the link to either one of the cars without the trouble of having to move the car itself. In the back part of the cylinder of the draw-head A is placed the heavier and stronger one of the two springs, which is intended to receive the full jar of the cars when they run together. Placed between these two springs *m* and *n* there is a movable collar, H, (shown in Fig. 4,) which moves back and forth on the rear end *o* of the buffer, and which serves to divide the springs from each other.

The operation of my invention is as follows: The link C is attached to one of the draw-heads, as shown in Fig. 1, while the bolt of the other coupler is placed in an upright standing position upon the head of the buffer, ready to fall into its position as soon as the link pushes the buffer back upon coming together. When the buffer is shoved inward the strain is first brought to bear upon the weak spring *m*, which is confined between the stationary collar *d* and the movable one H. The movable collar, bearing against the rear spring *n*, allows the shank or rear end *o* of the buffer-head to pass freely back through the opening in its center until it comes against the end of the enlargement *i*, when all strain upon the front spring at once ceases; and is transferred to the rear and stronger spring *n*, which prevents all jarring when the cars come together.

By making the draw-heads bell-shaped at their outer ends a free lateral or vertical play is allowed to the link C, so that its end may be raised or lowered or moved to either side, in case the other draw-head, to which it is secured, is not in line with it.

The links are intended to be of flat iron, having their ends rounded so as to fit in the concave ends of the buffer-heads, and it matters not

where they strike, just so that it is within the bell-shaped mouth, they will be guided by the slanting sides to the center of the head. These heads, revolving freely around in their cylinders, are thus prevented from wearing more in one place than another, and they will therefore be always true and last longer.

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

1. The buffer, consisting of the head B, stationary collar *d*, increase *i*, shank *o*, and mov-

able collar H, to divide the springs *m* and *n* arranged and operating, as described, in the draw-head A, all as set forth.

2. The buffer-head, with its collar and springs, when made in cylindrical form, and fitted in a corresponding cavity in the draw-head, as set forth.

WILLIAM RICKARDS, JR.

Witnesses:

T. C. CONNOLLY,

THOS. S. MERCER.