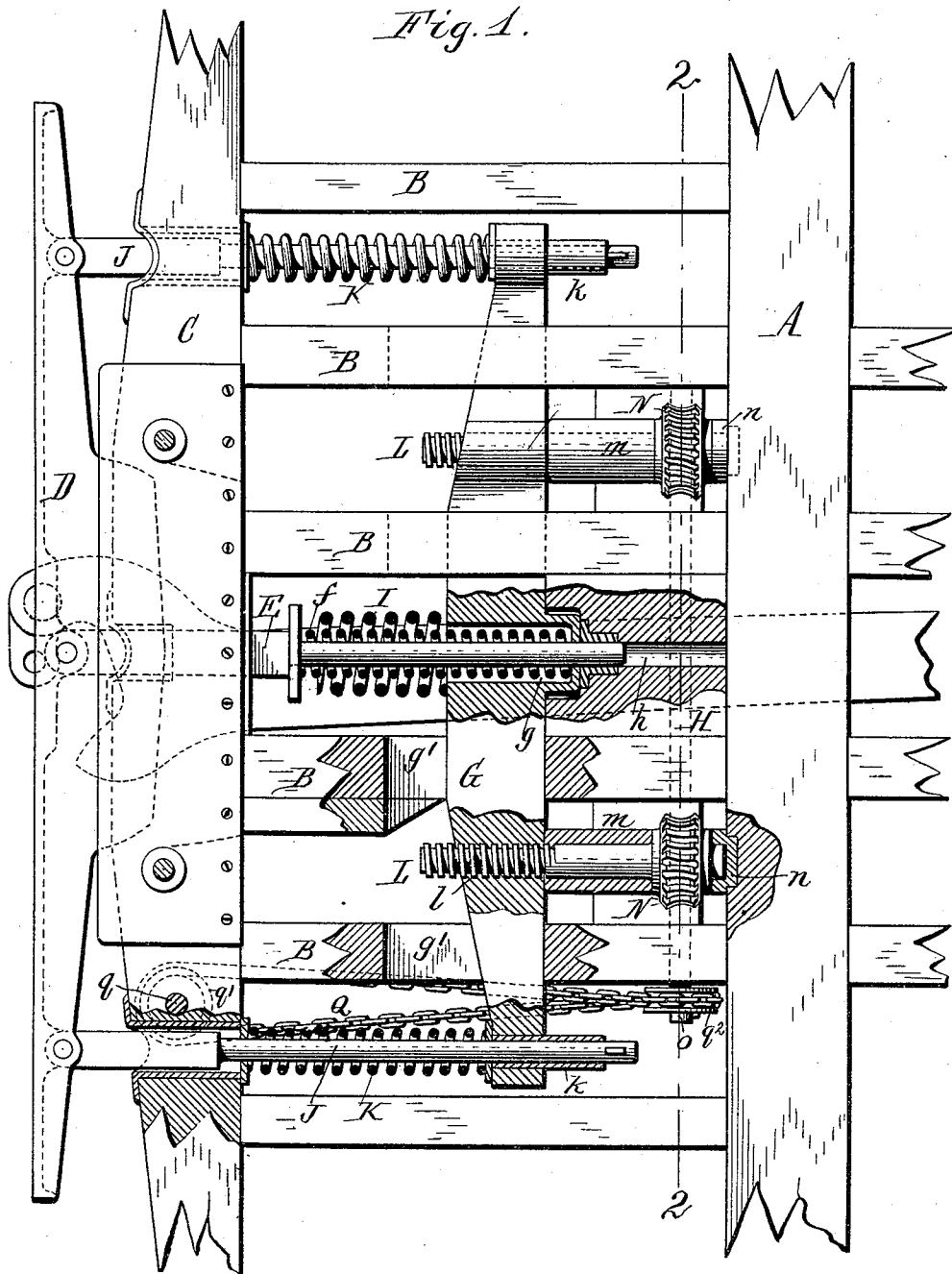


W. F. RICHARDS.  
CAR BUFFER.

No. 520,574.

Patented May 29, 1894.

Fig. 1.



Witnesses:

Emil Neuhart.  
Chas. F. Burkhardt.

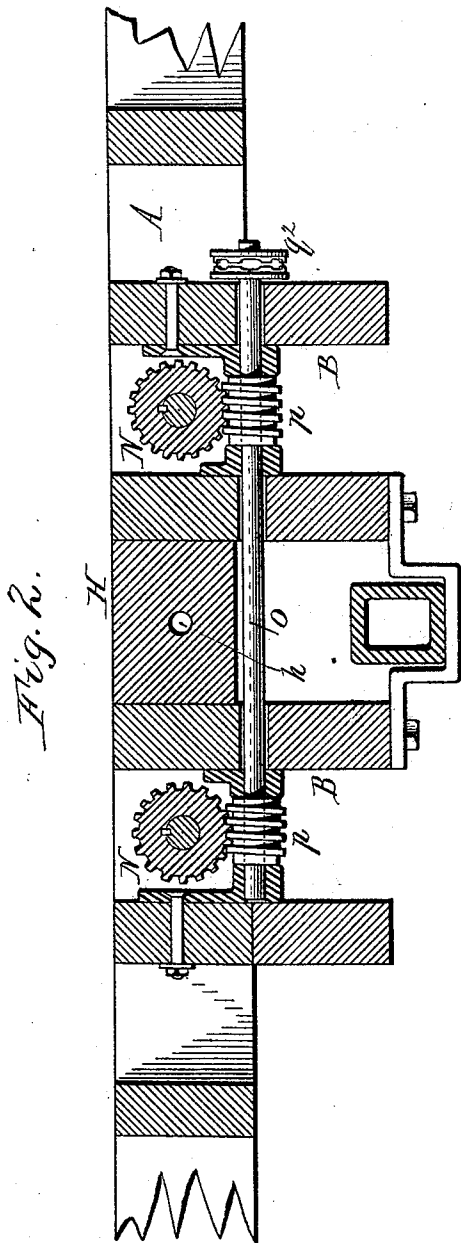
W. F. Richards Inventor.

By Wilhelm Bonner.  
Attorneys.

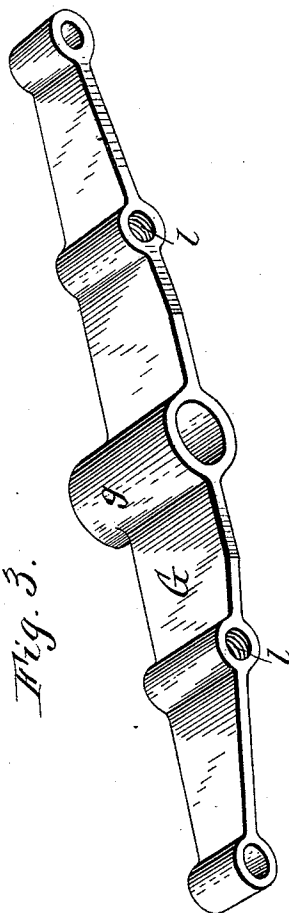
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*Fig. 2.*



*Fig. 3.*

Witnesses:

*Emil Neuhart.*  
*Chas. F. Burkhardt.*

*W. F. Richards* Inventor  
*By Wilhelm D. Dornier*  
*Attorneys.*

# 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. 520,574, dated May 29, 1894.

Application filed October 28, 1893. Serial No. 489,372. (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 has more particular reference to that class of car buffers which consist of a transverse plate forming a yielding extension of the main platform and pivoted at its middle, so as to accommodate itself to the position of the car on curves. These buffers are usually extended by spring mechanism which is sufficiently light to permit the cars to be conveniently coupled and uncoupled but yet powerful enough to keep the opposing buffers in close contact.

My invention has for its object to provide the buffer with a supplemental pressure device of inexpensive construction, whereby the tension of the spring mechanism may be increased after the cars have been coupled so as to more forcibly press the opposing buffers together and thereby check the rolling or swaying motion of the cars.

In the accompanying drawings consisting of two sheets:—Figure 1 is a sectional top plan view of the platform and adjacent portion of a railway car containing my improvement, the flooring being omitted to expose the parts below the same. Fig. 2 is a cross section in line 2—2, Fig. 1. Fig. 3 is a detached perspective view of the follower or abutment bar of the spring mechanism of the buffer.

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

A represents the end sill of the car body, B the longitudinal timbers of the stationary platform and C the cross timber connecting the outer ends of said longitudinal timbers.

D is the buffer which is pivoted centrally to the outer end of the main stem or bar E, in a common manner.

f is the light extension spring of the buffer which surrounds the contracted rear portion of the main buffer stem and bears with its front end against the usual collar or shoulder of said stem and with its rear end against the bottom of a horizontal socket g formed in a transverse follower or abutment bar G. The

rear portion of the buffer stem passes through an opening formed in the bottom of said socket and slides in an opening h formed in a fixed block H, in line with the opening of the socket. The follower G is guided in horizontal slots or recesses g' formed in the longitudinal timbers of the platform.

I is the usual heavy buffer spring which surrounds the light extension spring and bears with its rear end against the front side of the follower G.

J J represent the side stems of the buffer which are pivoted at their front ends to the buffer, and K K are the auxiliary buffer springs arranged on the side stems. The latter are guided with their front portions in openings formed in the cross timber C. Their rear portions may be guided in openings formed in the end portions of the follower, but they preferably slide in tubes k, as described and shown in Letters Patent of the United States No. 495,061, granted to me April 11, 1893, by which construction the side springs serve to hold the buffer from rattling when the cars are uncoupled, as well as to right the same. Any other suitable spring mechanism for extending the buffer may be employed, if desired.

L L represent horizontal pressure screws whereby the follower G is moved forwardly, for applying additional tension to the springs of the buffer. These screws engage with their front portions in screw nuts or internally threaded openings l, formed in the follower on opposite sides of its center and are journaled with their smooth rear portions in suitable bearings m arranged in rear of the follower.

N N are worm wheels secured to the rear portions of the pressure screws and arranged between the bearings of the latter and bushings or sockets n, secured to the front side of the end sill A, whereby the screws are held against lengthwise movement, but are permitted to turn. The rotary movement of the screws in one or the other direction thus causes the follower to be moved forward or backward, thereby further compressing the springs or allowing them to expand.

o is a transverse actuating shaft arranged underneath the worm wheels N, and p p

represent worms secured to said shaft and meshing with the worm wheels. The actuating shaft may be turned in any suitable manner, but it is preferably operated from the ordinary upright brake shaft  $q$  of the car, by an endless sprocket chain  $Q$  running around sprocket wheels  $q'$   $q''$  secured respectively to the brake shaft, and the adjacent end of the actuating shaft. When the actuating shaft is operated from the brake shaft, the brake chain connected with the latter is temporarily disconnected from the brake applying devices.

In the normal position of the parts before the cars are coupled, the follower  $G$  is in its rearmost position and bears against the rear ends of its guide slots, as shown in Fig. 1. In this position of the parts, the follower acts merely as a stationary rear abutment for the several springs, and upon coupling the cars the buffer is pressed inward in the ordinary manner. After coupling the cars, the brake operating chain is disconnected, and the brake shaft is turned in the proper direction to cause the pressure screws to turn forwardly, which causes the follower to be moved in the same direction, thereby further compressing the extension and auxiliary buffer springs and increasing their resistance accordingly. The additional pressure thus exerted upon the buffer causes the same to be pressed with correspondingly increased force against the buffer of the opposing car, whereby the movement of the buffers on each other is restrained and the disagreeable rolling or swaying motion of the car, permitted by ordinary buffers, is prevented.

When it is desired to uncouple the cars, the brake shaft is turned in the opposite direction, so as to cause the follower to recede and allow the springs of the buffer to expand to their former tension. The cars can now be

easily uncoupled as only the slight normal resistance of the extension spring must be overcome.

I claim as my invention—

1. The combination with the main platform, the buffer or platform extension and its spring or springs, of a follower bearing against the rear ends of said spring or springs and having a screw nut or opening, an operating screw held against longitudinal movement and engaging with said nut or opening, and an actuating wheel mounted on said screw, substantially as set forth.

2. The combination with the main platform, the buffer or platform extension and its spring or springs, of a follower bearing against the rear ends of said spring or springs, an actuating screw, held against longitudinal movement and engaging with a screw nut or opening in said follower, a worm wheel mounted on said screw, and a transverse shaft having a worm engaging with said worm wheel, substantially as set forth.

3. The combination with the main platform, the buffer and its spring mechanism, of a follower forming the rear abutment of said spring mechanism, a rotary pressure screw engaging with said follower, and having a worm wheel, a transverse actuating shaft having a sprocket wheel and a worm meshing with said worm wheel, an upright shaft arranged on the main platform and having a sprocket wheel, and a chain running around the wheels of said shafts, substantially as set forth.

Witness my hand this 21st day of July, 1893.

WILLARD F. RICHARDS.

Witnesses:

JNO. J. BONNER,  
CHAS. BURKHARDT.