

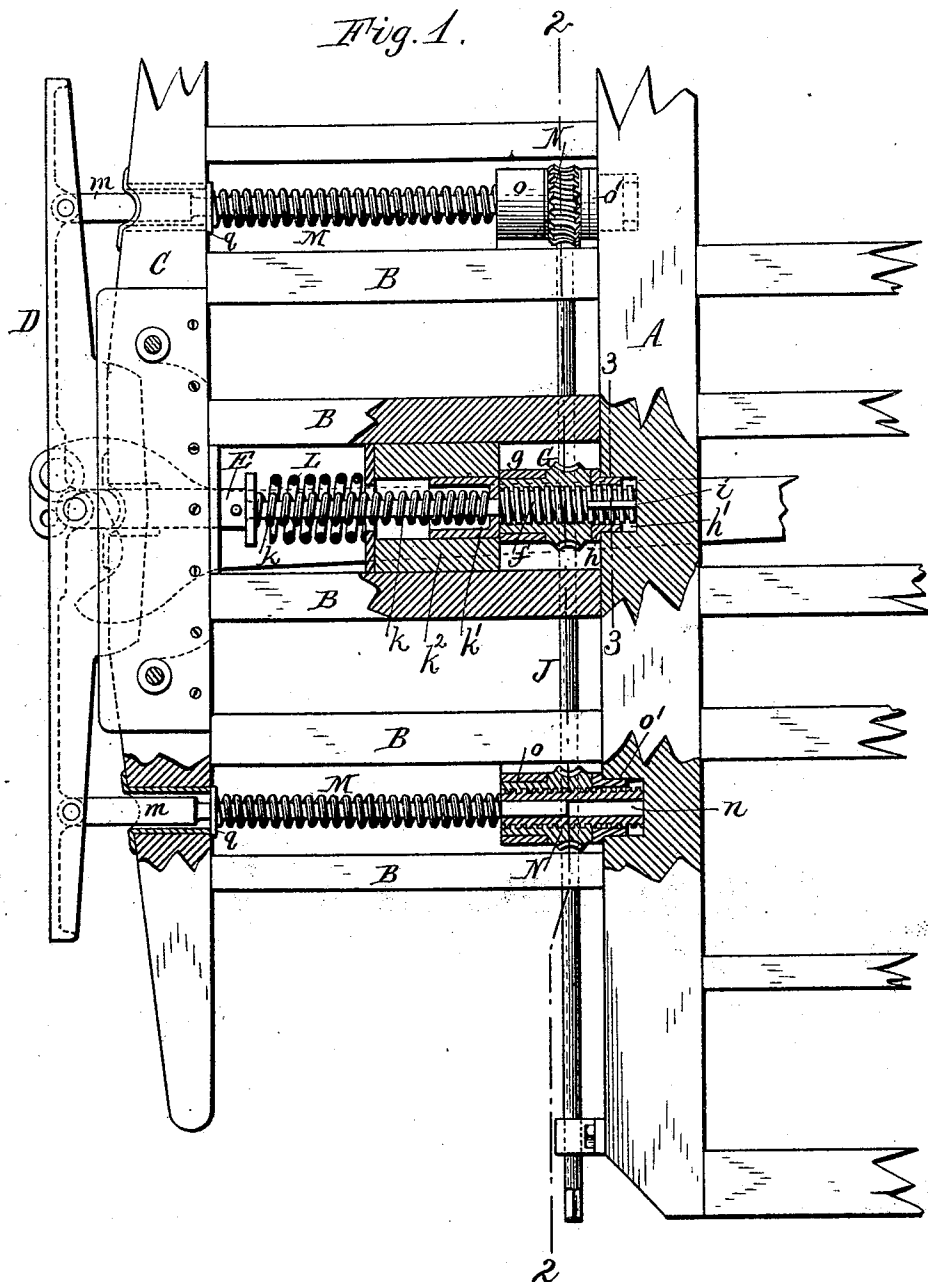
(No Model.)

2 Sheets—Sheet 1.

W. F. RICHARDS.
CAR BUFFER.

No. 520,575.

Patented May 29, 1894.



Witnesses:

Emil Neuhaert.
Theo. L. Popp.

W. F. Richards Inventor.
By Wilhelm Pommert.
Attorneys.

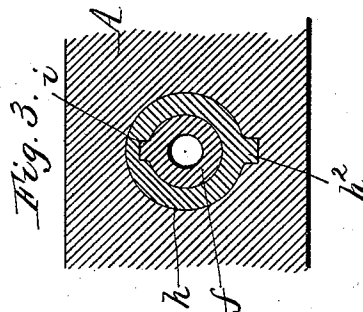
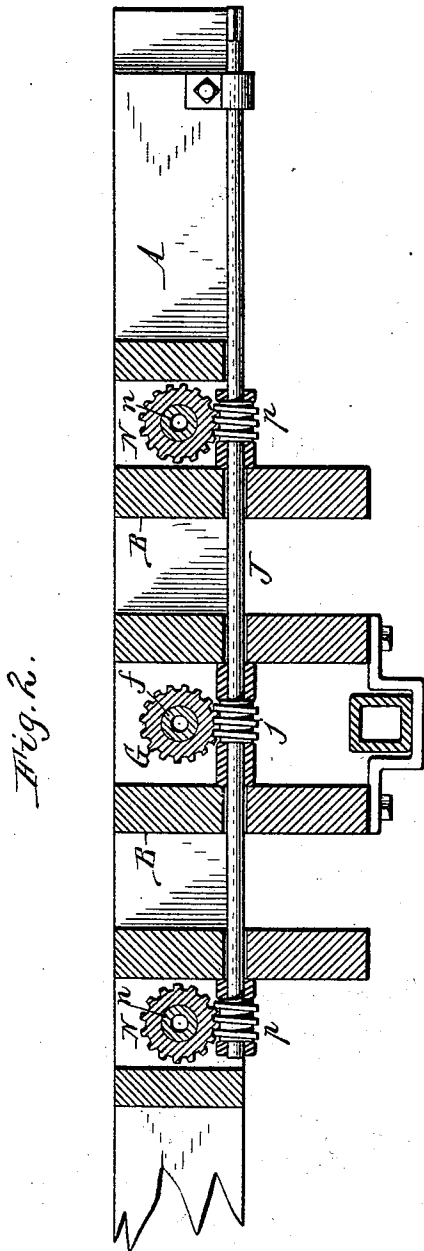
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Witnesses:

Emil Neuhart
Thos. L. Popp.

W. F. Richards Inventor
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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. 520,575, dated May 29, 1894.

Application filed November 1, 1893. Serial No. 489,723. (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.

My invention relates to the buffers or yielding platform extensions arranged at the ends of railway cars and more especially to buffers of this class which are capable of assuming an angular position, so as to accommodate themselves to the position of the car in rounding curves. Such buffers are usually extended by light springs which are compressed when the cars are coupled and which, though exerting sufficient pressure to keep the buffers of opposing cars in close contact, do not offer undue resistance to coupling and uncoupling the cars.

The object of my invention is the provision of simple mechanism for increasing the tension of the buffer springs after the cars have been coupled, so as to press the contacting buffers together with sufficient force to prevent them from moving upon each other 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 provided with my improvement, the flooring being omitted to expose the parts underneath the same. Fig. 2 is a cross section in line 2—2, Fig. 1. Fig. 3 is a cross section, on an enlarged scale, in line 3—3, Fig. 1.

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 the latter.

D is the transverse buffer or yielding platform extension which is pivoted at its middle to the outer end of the main buffer bar or stem E, in a well known manner. This buffer stem is guided with its front portion in an opening formed centrally in the cross timber and with its rear portion in a hollow lon-

gitudinal pressure screw *f*. This screw engages with an internal screw thread formed in the bore of a worm wheel G, arranged to turn on the screw and having a forwardly extending hub which is journaled in a suitable bearing *g* secured to one of the adjacent central timbers of the platform. This worm wheel is held against end wise movement in one direction by its bearing and in the opposite direction by a flange bushing or thimble *h* secured in an opening or recess *h'* formed in the front side of the end sill A. This thimble is held from turning by a longitudinal rib *h*² arranged thereon and entering a groove, formed in the opening *h'*, as shown in Fig. 3. The pressure screw extends through the smooth bore of the thimble and is provided with a longitudinal rib or feather *i* which engages in a corresponding groove formed in the bore of the thimble, as shown in the last-mentioned figure, whereby the screw, while free to move lengthwise, is held against turning in the screw threaded bore of the worm wheel.

J is a transverse actuating shaft arranged underneath the worm wheel G and supported in suitable bearings secured to the end sill of the car body.

j is a worm mounted on said actuating shaft and engaging with the worm wheel G. Upon turning this shaft in one or the other direction, the worm wheel is caused to turn accordingly, and as the worm wheel is held against endwise movement, and the pressure screw is confined against lengthwise movement, the latter is compelled to move forward or backward in the worm wheel. The ends of the actuating shaft are preferably made square or flat-sided so as to receive a detachable crank for turning the same.

k represents the usual light extension spring of the buffer, which surrounds the central buffer stem and bears with its front end against the customary collar or shoulder of the latter and with its rear end against the bottom of a socket *k'*. The latter abuts against the front end of the pressure screw *f* and is guided in a horizontal opening formed in a block *k*² secured between the longitudinal center timbers of the platform. The

socket k' is provided in its bottom with an opening through which the main buffer stem passes.

L is the usual heavy buffer spring surrounding the extension spring and abutting with its rear end against a metallic face plate applied to the front end of the block k^2 , said plate being formed with an opening for the passage of the main buffer stem and the extension spring, as shown.

$m m$ represent the side stems or longitudinal stay rods pivoted at their front ends to the buffer on opposite sides of its pivot, and M, M , are the auxiliary buffer springs which surround the side stems. The latter are guided with their front portions in openings formed in the cross timber of the platform and with their rear portions in hollow pressure screws n, n , arranged on opposite sides of the central pressure screw and engaging with the internally threaded bores of worm wheels $N N$. These worm wheels are constructed and arranged in all respects like the central worm wheel G , each of the same being formed with a hub extension supported in a bearing o and being held against endwise movement between said bearing and the thimble or bushing o' .

$p p$ are worms mounted on the actuating shaft J and meshing with the worm wheels N, N , respectively.

The auxiliary buffer springs are interposed between the front ends of the lateral pressure screws and the usual collars or washers q arranged on the side stems.

In the normal position of the parts before the cars are coupled, the pressure screws are retracted to the position shown in Fig. 1, in which position their front ends act as rigid abutments for the rear ends of the extension spring and the auxiliary buffer springs, and upon coupling the cars these springs act in the ordinary manner. After the cars have been coupled, the actuating shaft J is turned in the proper direction to cause the worm gearing to advance the pressure screws. As the springs bear against the front ends of the pressure screws their rear ends are compelled to move forward with the same, whereby their tension is increased. By thus applying an additional pressure to the buffer, the force with which it is pressed against an opposing buffer is supplemented accordingly, thereby restraining the movement of the contacting buffers upon each other and preventing rolling or swaying of the cars.

When it is desired to uncouple the cars,

the actuating shaft is turned in the opposite direction, to cause the pressure screws to recede to their former position and allow the springs to expand to their normal tension. The buffer now offers only the usual slight resistance and permits the cars to be easily uncoupled.

I claim as my invention—

1. The combination with the main platform and the buffer or platform extension, of a pressure screw, a buffer extension spring bearing at its rear end against said pressure screw, and an actuating wheel having an internal screw thread engaging with said pressure screw, substantially as set forth.

2. The combination with the main platform and the buffer or platform extension, of a pressure screw held against rotation but capable of longitudinal movement, a buffer extension spring bearing at its rear end against said pressure screw a worm wheel held against endwise movement and having an internally screw-threaded bore engaging with said pressure screw and an actuating shaft having a worm meshing with said screw, substantially as set forth.

3. The combination with the main platform, the buffer or platform extension and its spring mechanism, of a stationary thimble or bushing having a longitudinal groove, a pressure screw having a longitudinal rib engaging with said groove, and an actuating wheel having an internal screw thread engaging with the pressure screw, substantially as set forth.

4. The combination with the main platform, the buffer or platform extension and its bar or stem, of a hollow pressure screw receiving said stem, a spring surrounding said stem and bearing with its rear end against the pressure screw, and an actuating wheel having an internal screw thread engaging with the pressure screw, substantially as set forth.

5. The combination with the main platform, the buffer or platform extension, its main and side stems and the springs mounted thereon, of pressure screws forming the rear abutments of said springs, worm wheels held against endwise movement and having internal screw threads engaging with said pressure screws, and a transverse shaft having worms which engage with said worm wheels, substantially as set forth.

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

Witnesses:

JNO. J. BONNER,
CARL F. GEYER.