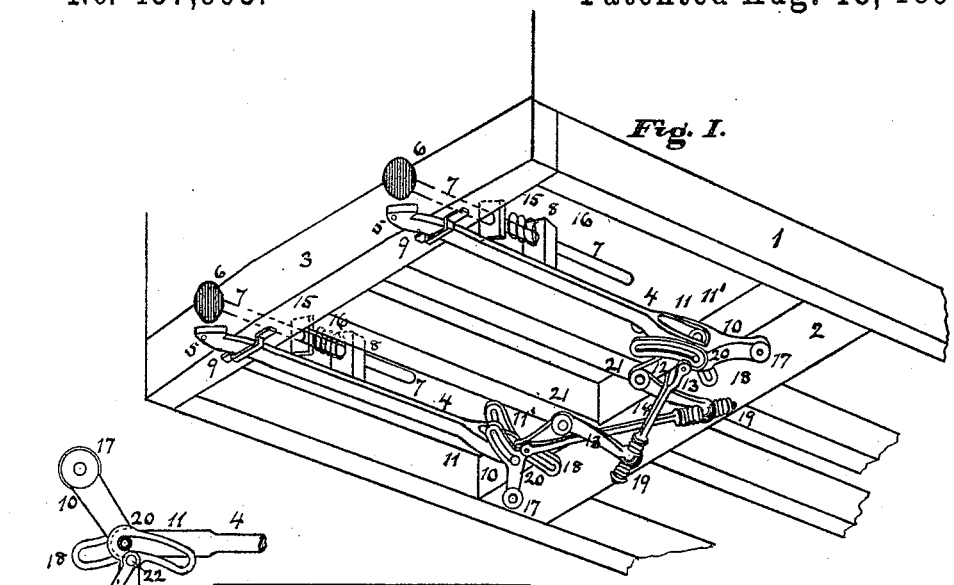
(No Model.) 3 Sheets—Sheet 1.

C. Z. HUBBELL.

CAR COUPLING AND BUFFER.

No. 457,995. Patented Aug. 18, 1891.

Fig. I.



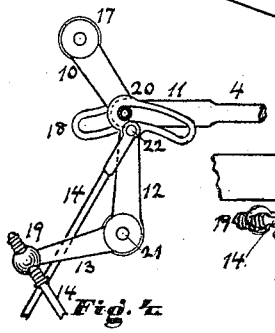


Fig. 4.

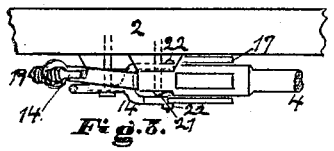


Fig. 3.

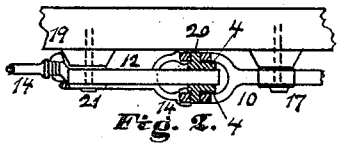


Fig. 2.

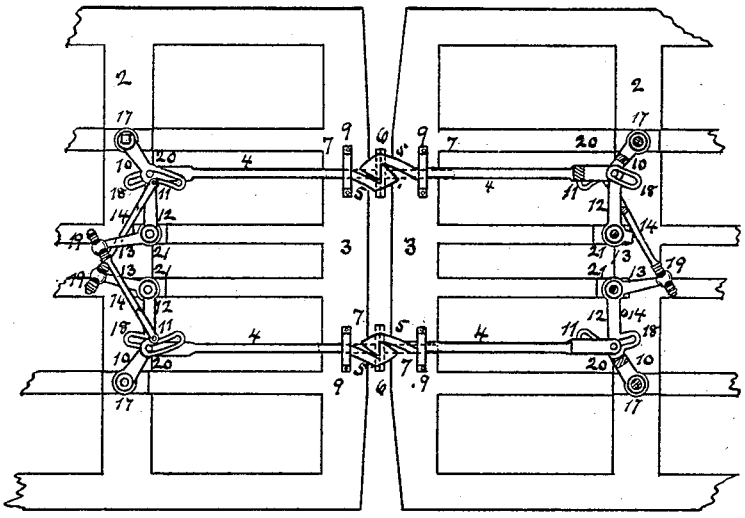


Fig. 5.

Witnesses.

Charles E. Tetley

Inventor.

Clarence Z. Hubbell.

by Adolph Baetens Attorney

(No Model.) 3 Sheets—Sheet 2.

C. Z. HUBBELL.

CAR COUPLING AND BUFFER.

No. 457,995. Patented Aug. 18, 1891.

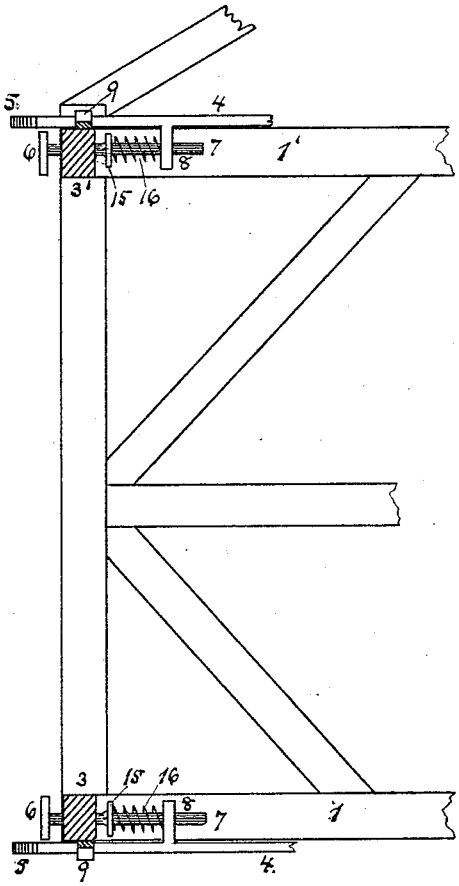


Fig. 6.

Witnesses,
Hampt J.
Charles E. Tetley

Inventor,
Clarence Z. Hubbell.

Attorney.
Hampt Brothers.

(No Model.) 3 Sheets—Sheet 3.

C. Z. HUBBELL.

CAR COUPLING AND BUFFER.

No. 457,995. Patented Aug. 18, 1891.

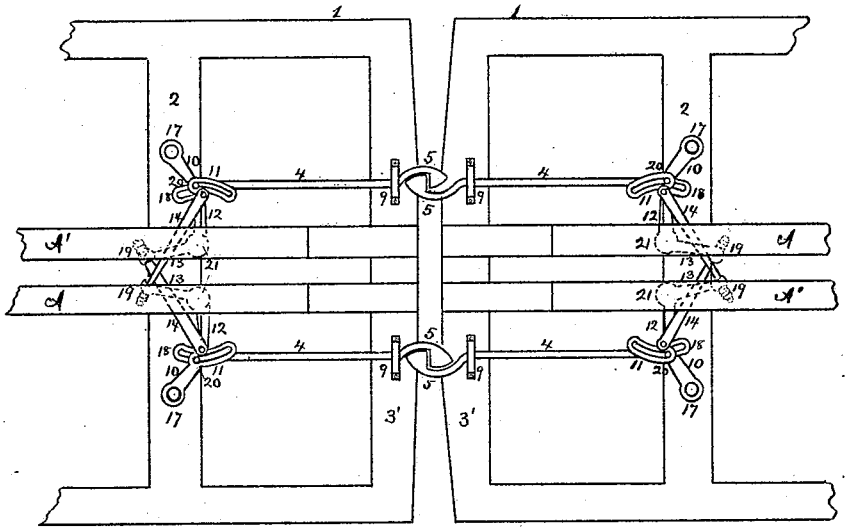


Fig. 8.

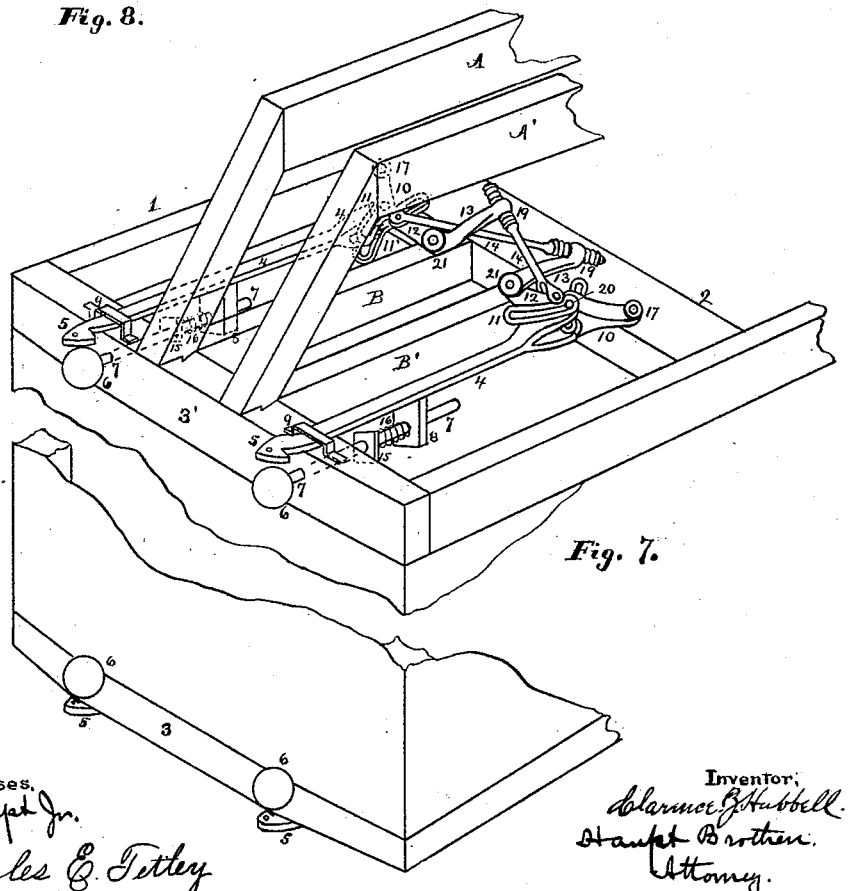


Fig. 7.

Witnesses.
A. Stanfat Jr.
Charles E. Tetley

Inventor;
Clarence Z. Hubbell.
Stanfat Brother.
Attorney.

UNITED STATES PATENT OFFICE.

CLARENCE Z. HUBBELL, OF CHICAGO, ILLINOIS.

CAR COUPLING AND BUFFER.

SPECIFICATION forming part of Letters Patent No. 457,995, dated August 18, 1891.

Application filed November 12, 1890. Serial No. 371,203. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE Z. HUBBELL, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Car Couplers and Buffers, of which the following is a specification.

My invention relates to "car couplers and buffers" in which parallel draw-bars traveling in guides are provided at the rear end with equalizing apparatus in such manner that the drawing out of one bar will draw in the opposite bar, and the said draw-bars are provided with a buffer attached thereto by springs.

The object of my invention is to provide a means for equalizing the pull on a car and of keeping cars of a uniform distance apart. I attain this object by means of the mechanism shown in the accompanying drawings, in which—

Figure 1 is a perspective view of the under side of the frame-timbers, showing the draw-bars attached in place. Fig. 2 is a sectional view of the end of the draw-bar. Fig. 3 is a side view of the draw-bar, showing the pivot end. Fig. 4 is a view of the equalizing mechanism of the draw-bar detached and enlarged. Fig. 5 is a plan view of the under side of two cars, showing the draw-bars in position and will answer also for a plan view of the top of the cars. Fig. 6 is a sectional view of the end of a car, showing end of a draw-bar and buffer at the top and bottom of the car, the draw-bar being broken off in the drawings. Fig. 7 is a view of the end and top of a car, showing the manner of timbering to hold the said coupling device. Fig. 8 is a plan view of the end and top of two cars.

Similar letters and figures refer to similar parts throughout the several views.

To the frame-timbers of a car, both at top and bottom at suitable points, I secure the arms 10, which are secured to the frame-timbers by the pin 17. At the outer end of the arm 10 farthest from the head and pin 17 are link-slots 11 11′, which are guides in which slide a pin 20. The said pin 20 is attached to the end of the draw-bar 4 and also moves in the link-slot 18, which is in an arm secured to the angle-arm 12. The link-slot 18 of the angle-arm 12 has a center at the pin 17. The angle-arm 12 is pivoted to the frame at a suitable point to the frame of the car by the pivot 21. This angle-arm 12 has a link-slot 18, which is centered at the pin 17, and extending from the body in which plays the pivot 20 is an arm 13, extending at an angle with the arm 12, and in the end of the arm 13 is a socket 19 for the reception of the end of the rod 14. The rod 14 passes through the socket 19, and on either side of the socket 19 are secured springs of suitable material to give elasticity and rigidity to the rod 14 and arm 13. The rod 14 extends diagonally from one arm 13 and socket 19 to the opposite inner margin of the link-slots 11 and 11′ of the arm 10, being secured by pins 22, the end of the said rod 14 being forked so as to embrace the link-slot 11 and 11′. The draw-bar 4 is secured at one end to the arms 10 and 12 by the pin 20 sliding in the link-slots 11 and 11′ and 18, and the outer end passes through the strap 9 on the end timber of the car. The extreme outer end of the draw-bar 4 terminates in a hook-head 5. At a convenient point on the draw-bar 4 is made the block 8, which is drilled to receive the end of the buffer-iron 7. The buffer-iron 7 extends through the end timbers of the car at top and bottom of the car and is provided with a head 6 on the outer end. At a convenient point a collar 15 is secured to the shank of the buffer-iron 7 for the purpose of holding the spring 16 and keeping the head 6 of the buffer-iron 7 extended.

On the top of the car is made a series of longitudinal and cross timbers B B′, A A′, and 2, and beneath the timbers A A′, secured to the timbers B and B′ and 2, is the coupling device of similar construction to that attached to the bottom of the car, the pivot 21 securing the arm 12 to the longitudinal beams B and B′ and the pivot 17 securing the arm 10 to the cross-beam 2.

Having now described the parts of my invention, I proceed to explain the method of operating the same. I secure the parts together, as indicated, and it will be noticed that in the description only one set of parts is described. This is for the reason that all the parts of a similar location are alike, and one

description answers for all. When so arranged, it will be seen that when the car is equipped with my mechanism it will be securely held together at top and bottom of the car. The hooks 5 of the draw-bar 4 engaging each other on the opposite car and the buffer-irons 7 being by the spring 16 kept rigidly together, the two cars are held in juxtaposition or abutting one with the other in a straight line. In turning a curve the draw-bar 4 on the outside end of the curve will be extended, and the pin 20 slides in the link-slot 11 and 11′ till it has reached the extreme end, and the action of the pin 20 in the link-slot 11 11′ draws on the rod 14, and the rod 14 draws the socket 19 and arm 13 and slides the pin 20 to the forward end of the link-slot 18, where it is locked or held firm, and in this way the strain of the drawing on the draw-bar 4 is equalized and distributed throughout the whole system. When the strain on the draw-bar on the outside of the curve is decreased, the springs in the sockets 19 restore the link-slots 11 and 11′ and 18 to the normal position and the draw-bars 4 to a uniformity of length.

I am aware that in the abstract draw-bars and couplers and buffers are not new, and I do not claim the same in a broad sense; but

What I do claim, and desire to secure by Letters Patent, is—

1. In a car coupler and buffer, the combination of a hooked draw-bar acting by a pin sliding in a link-slot carried by an angle-arm attached to a rod for equalizing and imparting a strain to the opposite draw-bar, and the means for taking up the slack, all substantially as and for the purpose set forth and described.

2. In a car coupler and buffer, the combination of a slotted link-arm pivoted to the frame of a car, the said link-slot carrying a pin attached to the draw-bar, combined with an angle-arm carrying a link-slot, and the means for equalizing the strain on the opposite draw-bar, all substantially as and for the purpose set forth.

3. In a car coupler and buffer, the combination of an angle-arm carrying a slotted link, and a socket at the other end of the bar, with the rod for equalizing the strain on the draw-bars, and means for taking up slack, all substantially as and for the purpose set forth.

CLARENCE Z. HUBBELL.

In presence of—
H. HAUPT, Jr.,
CHARLES E. TETLEY.