

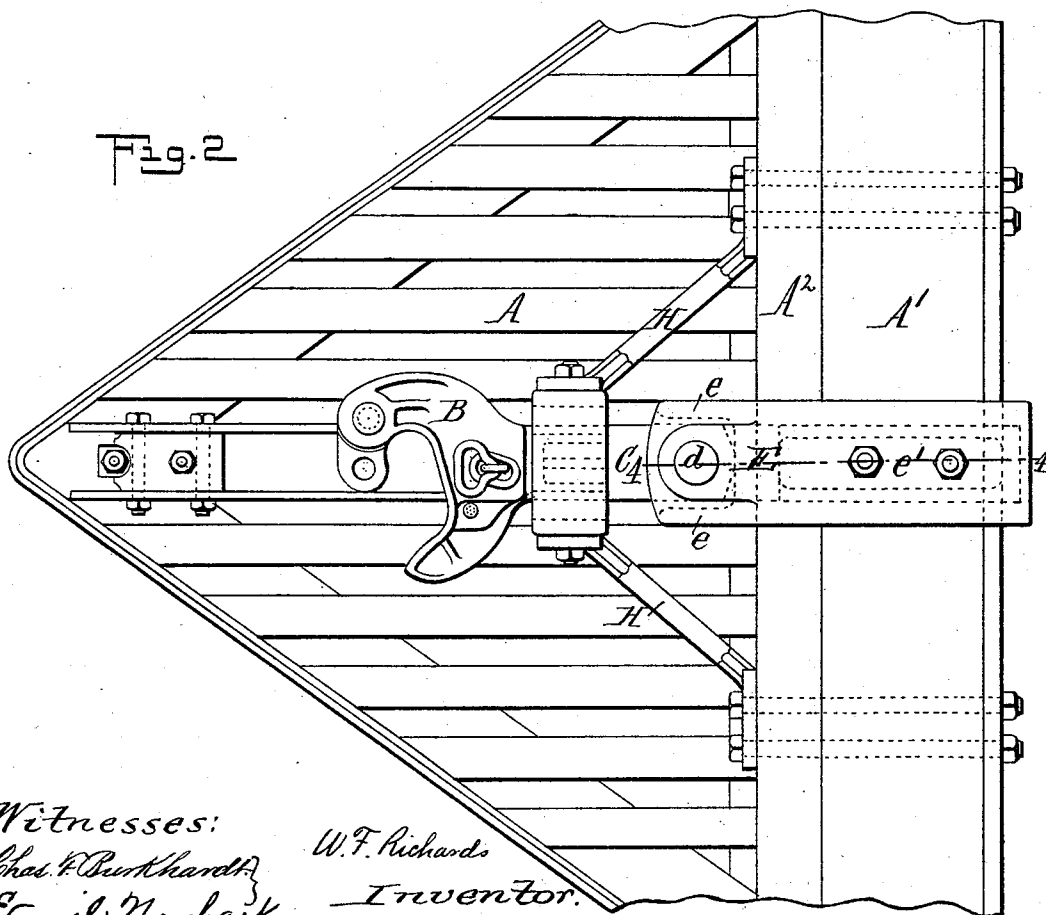
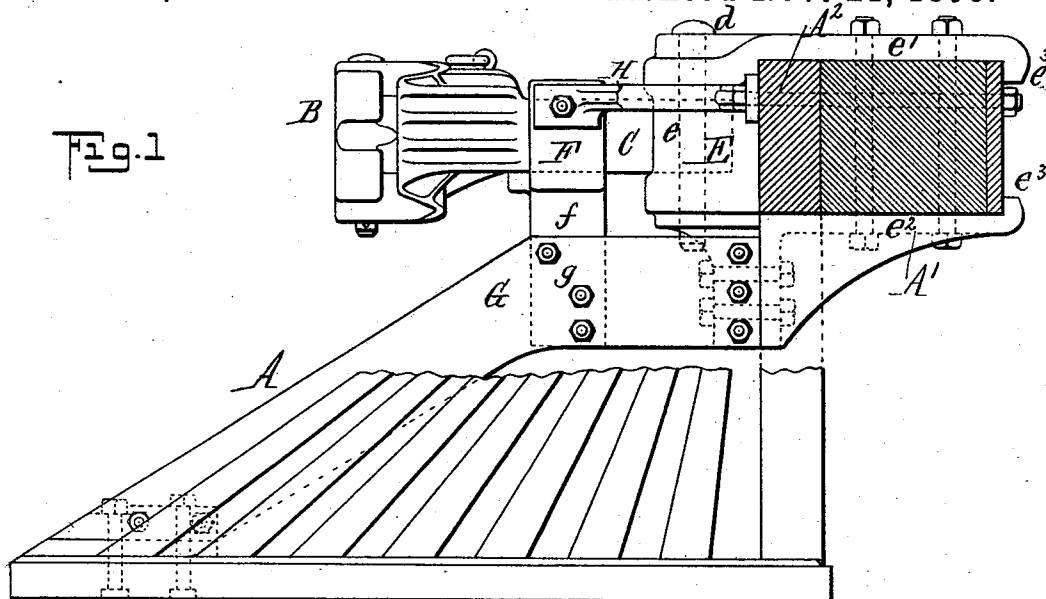
(No Model.)

2 Sheets—Sheet 1.

W. F. RICHARDS.
CAR COUPLING.

No. 509,100.

Patented Nov. 21, 1893.



Witnesses:

Chas. F. Burkhardt
Emil Neuhart

W. F. Richards

Inventor.

By Willhelm Mounst.

Attorneys.

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Fig. 3

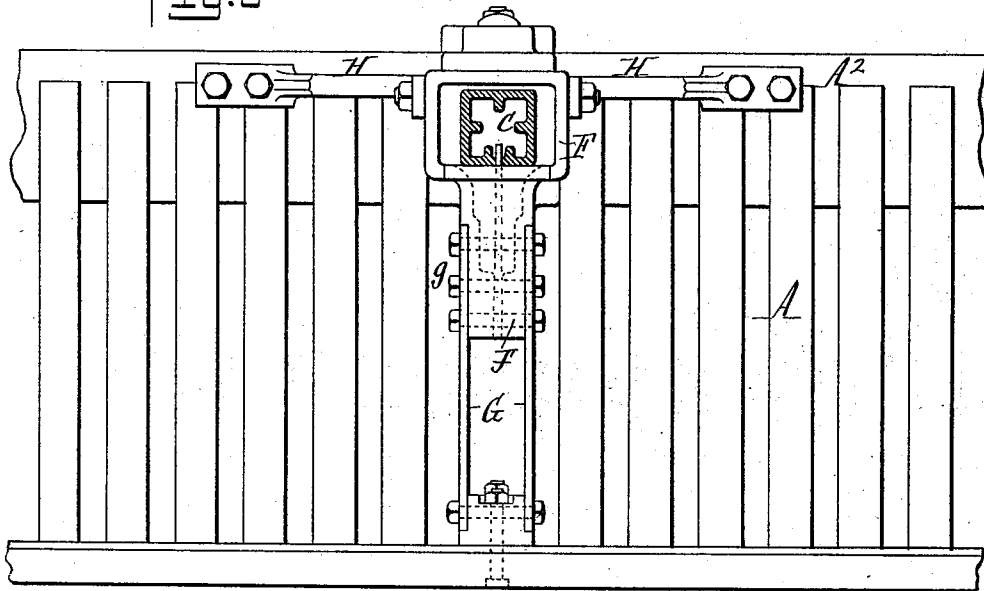


Fig. 4

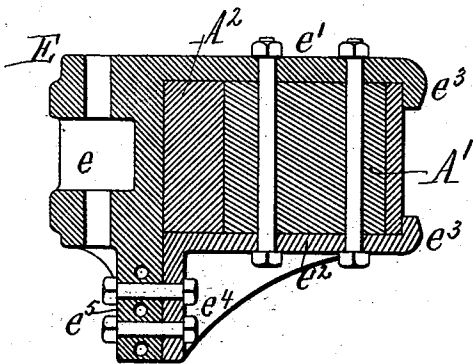
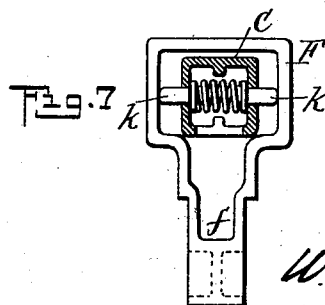
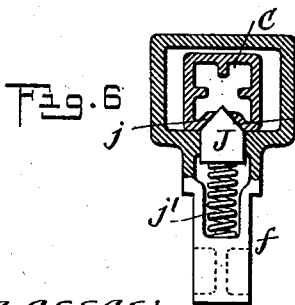
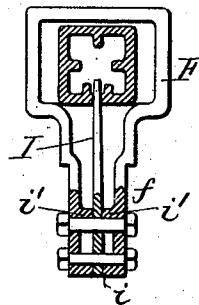


Fig. 5



Witnesses:

Chas. F. Burkhardt,
Emil Neuhart

W. F. Richards.

Inventor.

By Wilhelm Pomeroy,

Attorneys

UNITED STATES PATENT OFFICE.

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

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 509,100, dated November 21, 1893.

Application filed June 22, 1893. Serial No. 478,437. (No model.)

To all whom it may concern:

Be it known that I, WILLARD F. RICHARDS, a citizen of the United States, residing at the city of Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Car-Couplings, of which the following is a specification.

This invention relates to car couplings designed more particularly for use on locomotives.

My invention has for its object to improve the means whereby the car coupling is supported above the pilot of the locomotive, and at the same time to render the coupling capable of moving laterally, to allow it to accommodate itself to the position of the locomotive and permit coupling on curves.

In the accompanying drawings consisting of two sheets:—Figure 1 is a sectional elevation of the front portion of a locomotive provided with my improvement, with a portion of the pilot broken away. Fig. 2 is a top plan view thereof. Fig. 3 is a front view of the pilot with the draw bar in section. Fig. 4 is a vertical longitudinal section in line 4—4, Fig. 2. Fig. 5 is a sectional front view of the yoke in which the draw bar is supported. Figs. 6 and 7 are cross sections of said yoke and the draw bar, showing modified constructions of the means for centering the draw bar.

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

A represents the pilot of the locomotive, A' the front end sill of the locomotive frame, and A² the pilot beam to which the pilot is secured in the ordinary manner.

B is the car coupling, which is preferably of the automatic type, having a horizontally swinging jaw or knuckle and a lock for holding the jaw in its closed position; and C is the shank or draw bar which carries the coupling. The inner end of the draw bar is pivoted by an upright pin or bolt *d* to a bracket E, secured to the front side of the pilot beam A³, said bracket being provided with forwardly-extending parallel lugs *e* forming a pocket in which the inner end of the draw bar is arranged. The bracket E is formed with rearwardly extending plates *e'*, *e''*, which embrace the pilot beam A² and end sill, and

terminate in lips or flanges *e³* which overlap the rear side of the end sill A'. The lower plate is formed separate from the bracket and is secured to the same by longitudinal bolts *e⁴*, passing through a vertical flange at the front end of said plate, and a depending lug *e⁵* on the under side of the bracket, as clearly shown in Fig. 4.

F is a yoke or loop which is arranged in front of the bracket E and which supports the draw bar in advance of its pivot. This yoke is of sufficient width to permit the requisite lateral play of the draw bar and is supported upon the pilot by a lug or shank *f* extending downward from its underside and clamped between two longitudinal plates G G by transverse bolts *g*. These plates extend along the ridge of the pilot and are secured at their upper ends to opposite sides of the depending lug of the bracket E and at their lower ends to the pilot.

H H are diagonal braces secured at their rear ends to the pilot beam A² and at their front ends to opposite sides of the yoke F, whereby the latter is firmly held against lateral displacement.

I represents a centering spring whereby the draw bar is yieldingly held in its normal position. This spring is preferably flat and secured with its lower end in an upright pocket or slot *i*, formed in the lower portion of the depending lug of the yoke F while its upper free end passes through a slot or aperture formed in the under side of the draw bar as shown in Figs. 3 and 5. The lug *f* is formed within the pocket *i*, on opposite sides of the centering spring, with ribs *i'* against which the spring is strained when the draw bar is swung laterally in either direction. To permit the necessary play of the spring, the upper portion of said lug is recessed or chambered, as shown. As the centering spring always tends to assume an upright position, it yieldingly retains the draw bar in its normal position under ordinary circumstances, but allows the same to swing laterally out of such position in rounding curves. As soon as a curve is passed the draw bar is again returned to its central position by the reaction of the strained spring.

In the modified construction of the centering device, as shown in Fig. 6, a vertically movable spring bolt J, having reverse inclines *j j*, is employed in place of the flat upright spring. *j'* is a spiral spring seated in the pocket of the lug *f* and bearing with its upper end against the lower end of the bolt J. The upper end of the latter is arranged in an opening formed in the under side of the draw bar and having inclined sides corresponding to the inclines of the spring bolt. The inclines of the bolt bearing against the inclines of the opening in the draw bar, tend to center the latter. When the draw bar is moved laterally in either direction, the incline on the advancing side of its opening forces the spring bolt downward in the lug *f*. As soon as the locomotive passes upon a straight track, the spring bolt rises and thereby returns the draw bar to its normal position.

In the modification shown in Fig. 7, the centering spring, which is spiral, is arranged transversely within the cavity of the hollow draw bar and bears with its ends against the headed inner ends of transverse pins *k* which slide in openings formed in the side walls of the hollow draw bar and bear with their outer ends against the adjacent walls of the yoke F. In this construction, when the draw bar is swung out of center, the pin on the side thereof toward which it is swung, bears with its outer end against the wall of the yoke, and thus forms an abutment against which the spring is compressed by the head of the other pin, which latter is moved with the draw bar, away from the adjacent wall of the yoke. When the locomotive passes upon a straight track, the spring is relaxed, returning the deflected draw bar to its central position.

I claim as my invention—

1. The combination with the front frame of

a locomotive, the pilot and longitudinal plates extending along the ridge of the pilot, of a draw bar pivoted at its rear end to the locomotive frame, and a yoke supporting the front portion of the draw bar and having a downwardly extending shank secured between the longitudinal plates of the pilot, substantially as set forth.

2. The combination with the front frame of a locomotive and the pilot, of a bracket secured to said frame and having a depending lug, longitudinal plates extending along the ridge of the pilot and secured at their front portions to the pilot and at their rear portions to the lug of said bracket, a draw bar pivoted at its rear end to said bracket, and a yoke supporting the front portion of the draw bar and having a depending shank secured to the longitudinal plates of the pilot, substantially as set forth.

3. The combination with the front frame of a locomotive, of a draw bar pivoted to said frame, a yoke for supporting the front portion of the draw bar, arranged in front of the draw bar pivot, and a centering spring carried by said yoke and operating against the draw bar, substantially as set forth.

4. The combination with the front frame of a locomotive, and the pilot, of a draw bar pivoted at its rear end to said frame, a yoke supporting the front portion of the draw bar and having a depending recessed shank secured to the pilot, and an upright centering spring arranged in the recess of said shank and having its upper free end engaged with the draw bar, substantially as set forth.

Witness my hand this 19th day of June, 1893.

WILLARD F. RICHARDS.

Witnesses:

CARL F. GEYER,
FRED. C. GEYER.