W. F. RICHARDS.

CAR COUPLING.

APPLICATION FILED JAN. 21, 1910.

1,066,845. **Patented July 8, 1913.**

Fig. 1.

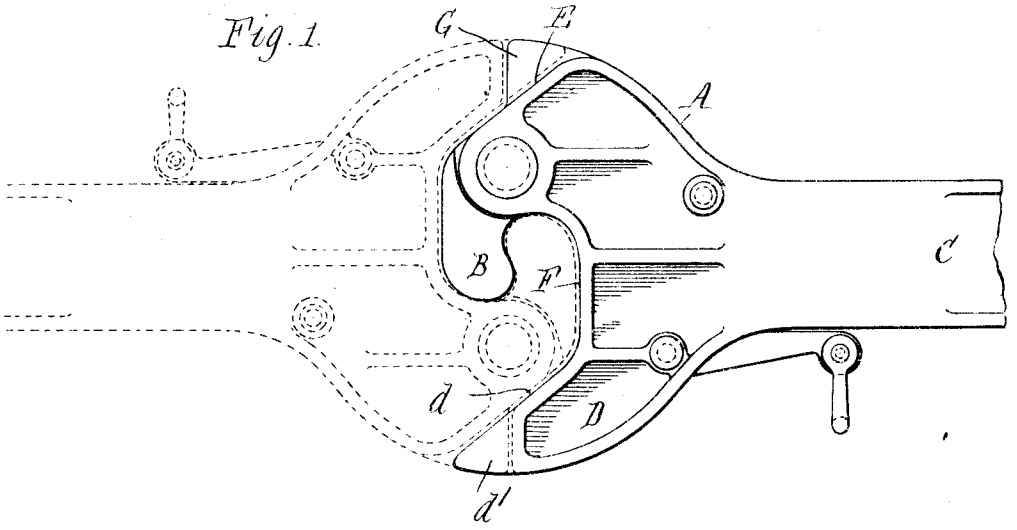


Fig. 2.

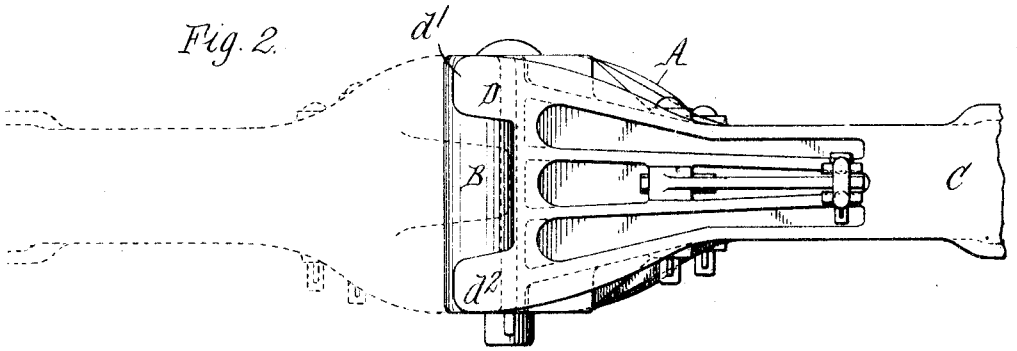
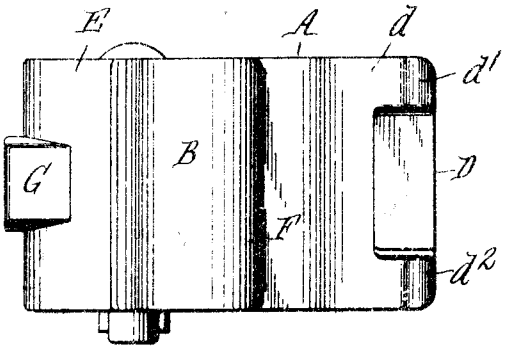


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

1,066,845. Specification of Letters Patent. Patented July 8, 1913.

Application filed January 21, 1910. Serial No. 539,429.

To all whom it may concern:

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

This invention relates more particularly to car couplers which are used on traction cars having no buffers and in which the coupler is pivoted to the car by a long shank in such a manner that the coupler can swing horizontally through a relatively long arc. When cars equipped with these couplers are coupled together and pass around a curve, the couplers swing on their pivots and do not swing or change their positions relatively to each other.

The principal objects of this invention are to facilitate the coupling of cars by providing a guard arm on the side of the coupler head, having an oblique inner face which engages with a corresponding oblique face on the opposing coupler head, whereby the couplers are caused to slide into proper operative engagement with each other in the event that they are out of line laterally when the cars are brought together; also to prevent the couplers from sliding vertically out of engagement with each other by providing the guard arm and the coöperating part on the opposing coupler with interlocking portions; also to produce strong and serviceable couplers for cars of this type in which the outer face of the knuckle and that part of the opposing coupler head with which the outer face of the knuckle engages are so constructed that when the two couplers are interlocked they will be prevented from buckling or swinging one on the other and will act as a rigid connection between the two cars and enable the couplers to be used for pushing as well as pulling the cars.

In the accompanying drawings: Figure 1 is a plan view of a car coupler embodying the invention, and indicating by dotted lines an opposing coupler interlocked therewith. Fig. 2 is a side elevation thereof. Fig. 3 is an end elevation of the coupler.

Like reference characters refer to like parts in the several figures.

A represents the drawhead of the coupler, at the outer extremity of which is pivoted a horizontally-swinging knuckle B of the kind commonly used and which coöperates with a knuckle lock of any suitable construction, in the coupler head. The shank C of the coupler is pivoted at its end to the car in any suitable manner.

The coupler head is provided at one side thereof with an outwardly or forwardly projecting guard arm D which is preferably made integral therewith. The guard arm has an oblique or inclined inner face *d* extending from its base to its outer extremity, and its extremity is bifurcated, thereby forming the upper and lower projecting parts d' and d^2. The side of the coupler head opposite to the guard arm D, or that side to which the knuckle is pivoted, extends laterally beyond the knuckle and is provided with an outer or front face E which is inclined correspondingly to the inclined inner face *d* of the guard arm of the opposing coupler. When two opposing couplers are brought together, if they are laterally out of line, the inclined inner faces *d* of the guard arms sliding on the opposing inclined faces E of the heads will draw the two couplers inwardly into alinement and insure the proper coupling of the cars, the pivotal connections of the coupler with the cars permitting this action.

The outer or front face F of the coupler head preferably extends from the inner end of the inclined inner face *d* of the guard arm perpendicularly to the center line of the coupler, thereby forming a straight pushing face which engages with the coöperating outer face of the knuckle of the opposing coupler. When the couplers are used for buffing or pushing cars, the force of the impact will not come on the outer point of the knuckle alone, but will be distributed over the entire outer face of the knuckle, which will greatly lessen the liability of breaking this member. When the two couplers are interlocked, the inclined faces *d* and E are in contact, as well as the faces F and the outer faces of the knuckles. Hence when all these parts of the couplers are in engagement, any lateral motion of one coupler with regard to the other will be prevented and the two couplers will form a substantially rigid connection between the two cars, which makes it possible to use them in buffing or pushing cars without having the couplers buckle or get out of alinement.

In the middle portion of the face E, near the side of the drawhead, is a projection G

which is adapted to enter between the parts d' and d^2 at the outer extremity of the guard arm D of the opposing coupler. The object of these coöperating parts on the sides of the drawheads is to keep the couplers from vertical disengagement. The projection G is preferably made of less height than the space between the projecting parts d' and d^2, so as to allow some vertical play of the couplers on each other, and also to prevent the projections on opposing couplers from striking and preventing the proper coupling of the cars.

The couplers provided with the described interlocking parts are preferable to a construction in which the drawhead is provided with a pocket to receive a guard arm or projection on the opposing coupler, and in which the guard arm is liable to strike and break the outer wall of the pocket if the couplers are not in alinement when brought together.

I claim as my invention:

1. In a car coupler having a horizontally-swinging knuckle, a drawhead provided at one side with an integral guard arm having an oblique inner face and at its knuckle side with a corresponding oblique face, the oblique face of the guard arm being adapted to engage the oblique face on the drawhead of an opposing coupler for guiding the two couplers into their engaging positions, said drawhead being provided at one side with a projecting portion having a bearing face extending transversely of the drawhead and at its opposite side with a bifurcated portion having an inner bearing face extending transversely of the drawhead, the bifurcated portion of one drawhead being adapted to receive the projecting portion of the drawhead of the opposing coupler, whereby the vertical disengagement of the coupler is prevented, and the bearing faces on the projecting and bifurcated portions of the drawhead being adapted to engage with each other when the couplers are interlocked to prevent the swinging of the couplers relatively to each other, substantially as set forth.

2. In a car coupler having a horizontally-swinging knuckle, a drawhead provided at one side with an integral guard arm having an oblique inner face and at its opposite side with a corresponding oblique face and having a face extending transversely of the coupler, said knuckle being provided with an outer face which extends substantially transversely of the coupler when the knuckle is closed and which is adapted to engage with said transverse face of the drawhead of an opposing coupler, the oblique face of the guard arm being adapted to engage the oblique face on the drawhead of an opposing coupler, and interlocking parts which are carried by the opposite sides of said head, one of said parts projecting outwardly from the oblique face on said head and the other part projecting outwardly from the guard arm and with one face substantially in a plane with the oblique face on said guard arm, said parts being adapted to prevent the vertical disengagement of the couplers, and bearing faces on the projecting part and on said guard arm which extend transversely of the coupler and which are adapted to engage with corresponding faces on the drawhead of an opposing coupler, said transverse faces of the knuckle and on the drawhead preventing the swinging of one coupler relatively to an opposing coupler, substantially as set forth.

Witness my hand, this 12th day of January, 1910.

WILLARD F. RICHARDS.

Witnesses:

EDMUND M. MAW,

CLIFTON C. EASTERBROOKS.