

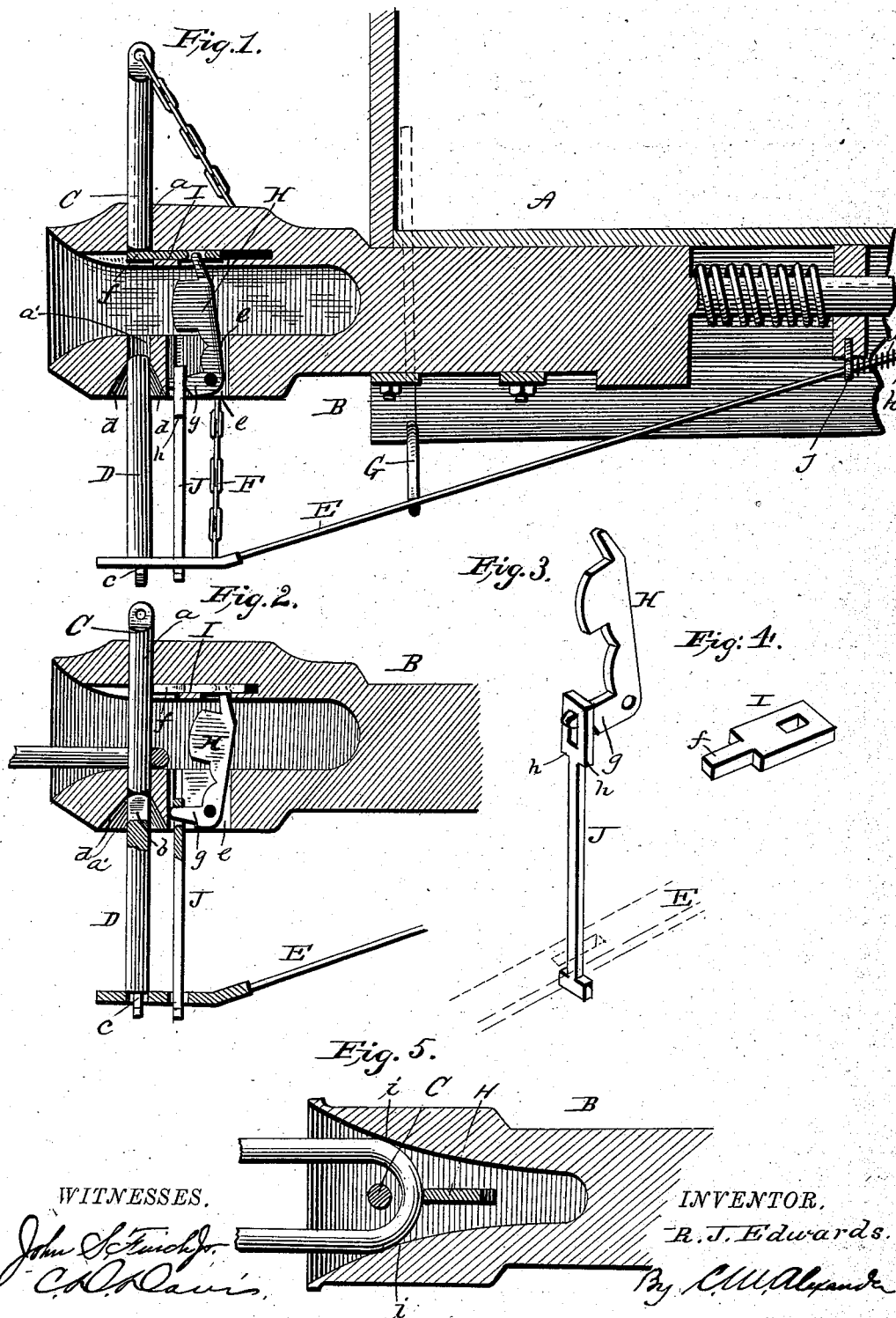
(No Model.)

R. J. EDWARDS.

CAR COUPLING.

No. 381,349.

Patented Apr. 17, 1888.



UNITED STATES PATENT OFFICE.

RICHARD J. EDWARDS, OF GALENA, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 381,349, dated April 17, 1888.

Application filed February 6, 1888. Serial No. 263,104. (No model.)

To all whom it may concern:

Be it known that I, RICHARD J. EDWARDS, a citizen of the United States, residing at Galena, in the county of Jo Daviess and State of Illinois, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has relation to certain new and useful improvements in automatic car-couplers, it having particular reference to that class of devices covered by Letters Patent No. 363,614 issued to me on the 24th day of May, 1887, this invention being practically an improvement on said patent, embodying some of its most important features, as will be more fully hereinafter set forth.

The special object of this invention is to improve the coupling and uncoupling devices, whereby they are rendered more positive in operation and more durable in construction and arrangement, as will presently appear.

The invention consists of certain novel features of construction and arrangements of parts, that will be fully hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, which form a part of this specification, Figure 1 represents a longitudinal sectional view of a portion of a car with my improved coupler attached, the coupling devices being shown in a position ready for coupling; Fig. 2, a similar view of the draw-bar detached, showing the parts coupled; Fig. 3, a detail perspective view of the upright lever, pivoted in the draw-head and its operating-rod; Fig. 4, a perspective view of the sliding dog for holding up the upper coupling-pin; and Fig. 5 is a longitudinal sectional view of the draw-bar.

Referring to the drawings by letter, A designates a portion of a car, and B the draw-bar attached thereto in any of the usual and well-known ways and provided with the usual draw-head.

C designates the usual coupling-pin setting in the vertical apertures *a a'* thereof in the draw-head, and held against loss by a suitable chain which attaches it securely to the draw-head. Extending into the lower aperture, *a'*, of the draw-head is a vertically-working setting-pin D, the upper end of which is recessed or slotted at *b*, for a purpose hereinafter set

forth. The lower end of this pin D is shouldered at *c*, and this shouldered end is loosely confined in a slot in the forward end of a pivoted lever, E, the pin being thereby held to its place in the lower aperture of the draw-head. This lever E extends back, and is preferably pivotally connected to one of the timbers of the car, and is limited in its downward movement by means of chains F, connecting it to the draw-head. This lever E is elevated, and with it the lower setting-pin, D, by means of a suitable crank-shaft, G, extending transversely of the bottom of the car, and provided midway its length with a U-shaped crank-arm in which the lever rests, the said crank-shaft being provided with suitable operating-handles at the sides of the car, as shown in dotted lines in Fig. 1.

It will be observed by reference to Fig. 2 that the forward and rear walls of the lower portion of the lower aperture, *a'*, in the draw-head are cut away or beveled, as shown at *d*. This construction permits the draw-bar to move forwardly and backwardly without displacing the lower pin, D, from the lower aperture in the draw-head, and also prevents binding of the lower pin in the aperture when the draw-bar moves either way. It will also be observed by reference to this same figure that the lower portion of the draw-head is somewhat deeper or thicker than the ordinary draw-head now in use, the object in this being to afford sufficient metal for the lower end of the coupling-pin to pull against and at the same time permit the lower pin to project well into the lower aperture.

Pivoted in a suitable slot, *e*, in the lower portion of the draw-head, immediately to the rear of the coupling-pin aperture, is a lever, H, which extends up vertically across the mouth of the draw-head and engages in the slot of a slotted sliding dog, I. This dog I is arranged to reciprocate in a suitable recess cast in the upper portion of the draw-head to the rear of and in close proximity to the coupling-pin aperture, the dog being provided at its forward end with a projection or lug, *f*, which, when the dog is moved forward, extends across the said coupling-pin aperture and serves to support the coupling-pin, as shown in Fig. 1, ready for coupling. Formed on the lower end of the pivoted lever H is a forwardly-project-

ing lug or arm, *g*, and hung on this lug or arm is a depending rod, *J*, the upper end of which is slotted for engagement with the said lug *g*. The lower portion of this depending rod *J* passes through a guiding-slot in the pivoted lever *E*, and is provided with a head or button on its lower end, which prevents its disconnection from the said pivoted lever. At a determined point in its length this depending rod is provided with shoulders or projections *h*, which come in contact with the lever *E* when the same is elevated, for a purpose hereinafter described.

It will be observed that, by reason of its weight, the tendency of the depending rod *J* is to keep the upper end of the pivoted lever *H*, and with it the sliding dog, pressed normally forward. It will be evident that this depending rod may also be made to serve to support the pivoted lever *E*, thus assisting or doing away entirely with the chains for that purpose.

By reference to Fig. 5 it will be observed that I have contracted the mouth of the draw-head to the rear of the coupling-pin, as at *i*, my object being to provide abutments or stops for the coupling-link, so that the vertical lever *H* will not be injured by the link when it enters the draw-head. The rear end of the pivoted lever *E* is attached to one of the timbers of the car by an eyebolt, *j*, through the eye of which the lever passes. The lever is extended a little beyond the eyebolt, and is there provided with a head or shoulder, *k*, between which and the eyebolt is interposed a coiled spring, *l*, for a purpose hereinafter specified.

To place the devices in position for automatic coupling, the pivoted lever *E* is elevated by means of the crank-shaft *G*. The lower setting-pin, *D*, attached to the forward end of this lever, being also elevated thereby, will push up the coupling-pin, and the sliding dog *I* being held normally forward by means of the pivoted lever *H* and the depending rod *J*, as soon as the lower end of the coupling-pin is above, it will move under the coupling-pin and into the recess or slot *b* in the upper end of the said setting-pin *D*, after which the pivoted lever, and with it the pin *D*, is permitted to drop down out of the way.

When the coupling-link enters the draw-head, it impinges against the pivoted lever *H* and moves its upper end, and with it the sliding dog, backward, thus permitting the upper pin to drop through the coupling-link to couple the cars.

One of the essential features of this invention is the means whereby the sliding dog may be thrown back and the coupling-pin dropped when the entering coupling-link attached to the adjacent car is too short to impinge or strike against the pivoted lever which usually operates the dog. This desirable object is accomplished by means of the shouldered depending rod *J*, hung on the forwardly-extending arm of the lever *H* in the following manner: In case the entering link is not long

enough to throw back the pivoted lever *H*, and with it the sliding dog, the lever *E* is elevated until it comes in contact with the shoulders *h* upon the depending bar *J*, when the bar is also carried up. This bar, engaging as it does with the lower end of the lever *H*, will cause its upper end to move back and carry with it the sliding dog *I*, thereby releasing the coupling pin and permitting it to drop into place.

In uncoupling, the coupling-pin may be withdrawn by hand in the usual way, or may be ejected by means of the lower setting-pin, *D*, this being accomplished by giving a sudden quick movement to the lower pin by means of the crank-shaft *G*, when the coupling-pin will be thrown out of the aperture in the draw-head.

The object in interposing a coiled spring between the eyebolt *j* and the head *k* of the lever *E* is to permit the lever to move with the draw-bar when the same is moved back and forth in operation.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a car-coupling, the combination, with the draw-head provided with the vertical pin-apertures, the front and rear walls of the lower portion of the lower one of said apertures being cut away or beveled, as at *d*, of the lower setting-pin setting in the lower beveled aperture, and the pivoted lever *E*, connected to the said lower pin, as and for the purpose set forth.

2. The combination, with the draw-head provided with the usual vertical pin-apertures, of the coupling-pin, the sliding dog in the draw-head to the rear of the coupling-pin, the lever *H*, pivoted in the draw-head and engaging with the said sliding dog, the depending rod *J*, attached to the said lever *H*, and levers for operating the depending rod, substantially as described.

3. The combination, with the draw-head provided with the usual vertical apertures, of the coupling-pin, the lower setting-pin, the sliding dog *I*, sliding in a recess to the rear of the coupling-pin aperture, the pivoted lever *H*, engaging with the said sliding dog, the depending rod *J*, and operating-levers, substantially as described.

4. The combination, with the draw-head, of the coupling-pin, the sliding dog *I*, the pivoted lever *H*, engaging with and operating the said sliding dog, the said pivoted lever being provided on its lower end with a forward extension or arm, *g*, the depending rod *J*, hung on this arm *g* and provided with shoulders or projections *h*, the pivoted lever *E*, and a crank-shaft for operating this lever *E*, substantially as described.

5. The combination, with the draw-head, of the coupling-pin, the lower setting-pin, *D*, the lever *E*, for operating and supporting the said pin *D*, the sliding dog *I*, pivoted lever *H*, for

operating the said dog, the shouldered depending rod J, hung upon the said pivoted lever H, the said depending rod J passing through a longitudinal slot in the lever E, and
5 the crank-shaft for operating said lever E, substantially as described.

6. The combination, with the draw-bar, of the vertical setting-pin D, inserted in the lower aperture of the draw-head, and the lever E, attached loosely to the lower end of this pin D,
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the rear end of the said lever E being yieldingly and pivotally attached to the car-timbers, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

RICHARD J. EDWARDS.

Witnesses:

JOHN M. LEEKLEY,
JAS. S. BAUME.