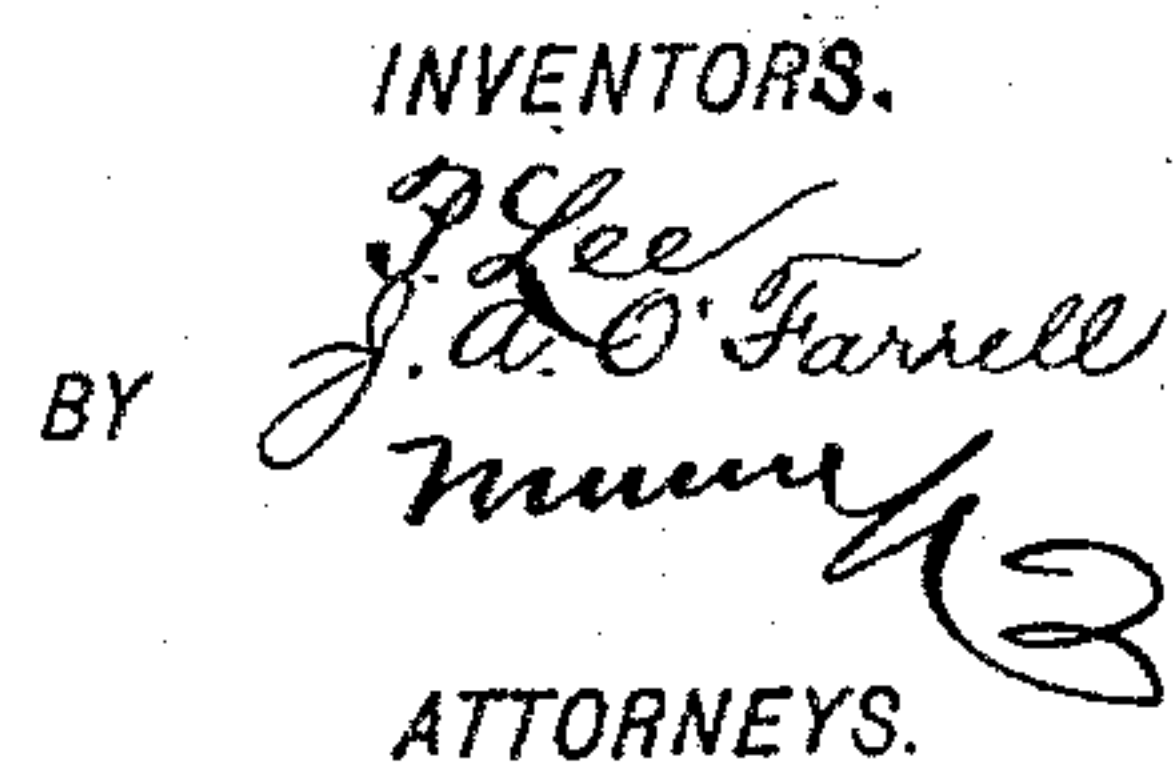


P. LEE & J. A. O'FARRELL.
CAR COUPLING.

Patented Jan. 17, 1893.



UNITED STATES PATENT OFFICE.

PATRICK LEE AND JOHN ANDREW O'FARRELL, OF BOISE CITY, IDAHO;
SAID LEE ASSIGNOR TO SAID O'FARRELL.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 490,147, dated January 17, 1893.

Application filed July 6, 1892. Serial No. 439,113. (No model.)

To all whom it may concern:

Be it known that we, PATRICK LEE and JOHN ANDREW O'FARRELL, both of Boise City, in the county of Ada and State of Idaho, have invented a new and Improved Car-Coupling, of which the following is a full, clear, and exact description.

The invention relates to car couplings such as shown and described in the Letters Patent of the United States No. 463,522, granted on November 17, 1891, to Patrick Lee, one of the present applicants.

The object of our invention is to provide a new and improved car coupling which is simple and durable in construction, very effective in operation, and arranged to be readily taken apart whenever desired.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement showing two cars coupled, one of the drawheads being in section; Fig. 2 is a sectional front view of the improvement on the line 2—2 in Fig. 1; Fig. 3 is a face view of one of the dogs; and Fig. 4 is a plan view of the bottom plate for the drawhead.

The improved car coupler is provided with a drawhead A formed at its front end, on the top, with a hook B adapted to be engaged by the link C of the drawhead of the opposite car. In the underside of the drawhead A is formed a longitudinally extending recess D closed by a bottom plate E held in position by a plate F extending into the rear end of the recess D and engaged by a shaft G, extending transversely through the drawhead, as shown. The ends of the shaft G reach to the sides of the car and said shaft is provided, at the outer ends, with handles G' for conveniently turning the shaft G from either side of the car, for the purpose hereinafter more fully described.

In order to hold the bottom plate E in position by the plate F, the said bottom plate is formed, near its rear end with an opening E' of almond shape, as is plainly shown in Fig.

4, and engaged by a shank F' projecting from the lower end of the plate F. On the lower end of the shank F' is formed a head F² arranged in almond shape, similar to the shape of the opening E', but extending in an opposite direction to the opening in the bottom plate, so that when the two parts are in position, as shown in Fig. 1, the bottom plate is securely held in place. When the plate E is turned one hundred and eighty degrees and pushed rearward, then the opening E' registers with the head F² and the bottom plate can be removed from the shank by sliding the bottom plate downward.

In the bottom plate E is formed a longitudinal guideway E² engaged by a plate H formed, at its ends, with upward flanges or extensions H' and H², of which the forward extension H' projects slightly beyond the front end of the drawhead so as to be engaged by the opposite extension H' of the other drawhead. The front and rear flanges H' and H² extend in recesses in the drawhead, so as to hold the plate H in position. The rear extension H² is also adapted to engage the end of the link C so as to throw the same downward when the two cars are coupled, as hereinafter more fully described, the link then engaging the hook B of the opposite drawhead.

By reference to the right-hand part of Fig. 1, it will be seen that when the link C is disconnected from the inward extension or flange H² of the plate H, then the latter, when drawn outward and swung upward at the front end, can be withdrawn from the drawhead for repairing it or for other purposes. The plate H in a like manner can be again inserted in the drawhead to perform its functions, as described.

The link C in each drawhead is elongated with rounded ends and is adapted to be engaged at its sides by lugs I' formed on the inner faces of the arms or link-lifters I, keyed or otherwise secured on the shaft G. The arms I serve to swing the link C out of engagement with the hook B of the opposite drawhead A, it being understood that for this purpose the shaft G is turned from the side of the car by the operator manipulating either of the handles G'.

In the top of each arm I is formed a notch

I² adapted to be engaged by a dog J secured on a transversely extending shaft K mounted to turn in suitable bearings in the drawhead A, in the upper rear part thereof. Each dog J is formed on its under side with a curved projection forming a cam J', adapted to be engaged by a curved arm L secured on a shaft L', mounted to turn in suitable bearings in the arm I and the handle G' of the shaft G. The outer end of each shaft L' is formed with a handle L² extending close to the handle G' of the shaft G. By swinging the handle L² upward the shaft L' is turned and its curved arm L engages the cam J' of the respective dog J, so that the latter is drawn out of engagement with the notch I² and the arm I is unlocked, after which the operator can turn the handle G' so as to turn the shaft G to cause the arm I to swing upward. The upward movement of the arm I causes a like swinging motion of the link C to disengage the upper end of the latter from the hook B of the opposite drawhead, it being understood that at this time the two cars are backed up, so that the drawheads are close together. The dogs J can also be actuated from the top of the car as well as the arms I, and for this purpose the dogs are connected with a chain N which extends to the top of the car. Each dog J is also connected by a chain N' with the corresponding arm I on that side of the drawhead, the said chain N', however, being slack until the dog J is swung out of contact with the notch I² on the upward pull of the chain N. Thus when the operator pulls on the chain N, the dog J swings upward out of engagement with the arm I, and on the further pull, the chain N' becomes taut and exerts a pull on the arm I, so that the latter begins to swing upward and disengages the link C from the hook B of the opposite drawhead, as the operator continues the pull on the chain N. Each of the drawheads is also provided, in its front, with an opening extending longitudinally and arranged for the entrance of an ordinary link, the hook B being formed with a vertical opening for the passage of the ordinary pin to engage the ordinary link in the drawhead.

It is understood that by the plate H engaging the longitudinal guideways E² in the bottom plate E, the latter is prevented from turning to disconnect the bottom plate at the shank F', as previously described.

It will be seen that two arms or link lifters I are arranged for each link, and two dogs are employed to lock the said arms or link lifters in place, so that accidental uncoupling is not likely to take place.

The device is used similarly to the one described in the Letters Patent above referred to, that is, one of the links C is thrown in an uppermost position by its arms or link lifters I, and when the two cars move toward each other the extensions H' of the plates H strike each other and one actuates the upwardly extending link so as to throw it forward to cause

the link to engage the hook B of the opposite drawhead.

When it is desired to uncouple, the two cars are backed up and the operator then swings the arms or link lifters I upward, after the same have been unlocked by raising the dogs J, as above described. The other link not coupled, may either extend vertically upward, as shown in Fig. 1, or hang downward as described.

Having thus described our invention, we claim as new, and desire to secure by Letters Patent:—

1. In a car coupler, the combination with a drawhead formed with a hook at the top, near the front end, of a link mounted to swing loosely in the said drawhead, a shaft extending transversely in the said drawhead, and two arms or link lifters secured on the said shaft and each formed with two lugs engaging the sides of the link, substantially as described.

2. In a car coupler, the combination with a drawhead formed with a hook at the top, near the front end, of a link mounted to swing loosely in the said drawhead, a shaft extending transversely in the said drawhead, two arms or link lifters secured on the said shaft and each formed with two lugs engaging the sides of the link, and dogs pivoted on the said drawhead and engaging the said lifters to lock the latter in place, substantially as described.

3. In a car coupler, the combination with a drawhead formed with a hook at the top, near the front end, of a link mounted to swing loosely in the said drawhead, a shaft extending transversely in the said drawhead, two arms or link lifters secured on the said shaft and each formed with two lugs engaging the sides of the link, dogs pivoted on the said drawhead and engaging the said lifters to lock the latter in place, and means, substantially as described, for successively lifting the said dogs and lifters, to first unlock the latter and then raise the lifters to impart a swinging motion to the link, as set forth.

4. In a car coupler, a drawhead provided in its under side with a recess, a bottom plate for closing the said recess and formed with an elongated opening, and a plate held in the drawhead and formed with a shank and head, of which the latter corresponds in shape to the opening in the said bottom plate, substantially as described.

5. A car coupler provided with a drawhead formed in its under side with a recess, a bottom plate for closing the said recess, and a plate having extensions or flanges and fitted to slide in the said drawhead and partly in the said bottom plate, substantially as described.

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Witnesses:

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JUDSON SPOFFORD.