

T. FIRTH & J. W. HOLLIS.

Improvement in Car-Couplings.

No. 131,673.

Patented Sep. 24, 1872.

Fig. 1.

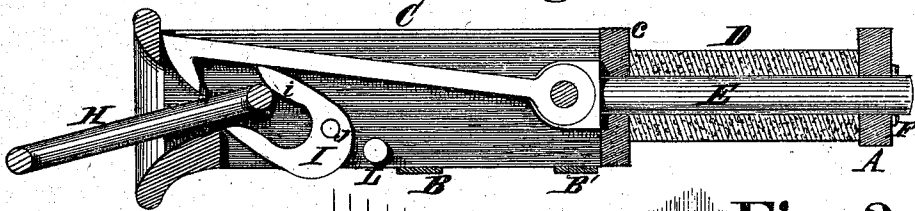


Fig. 2.

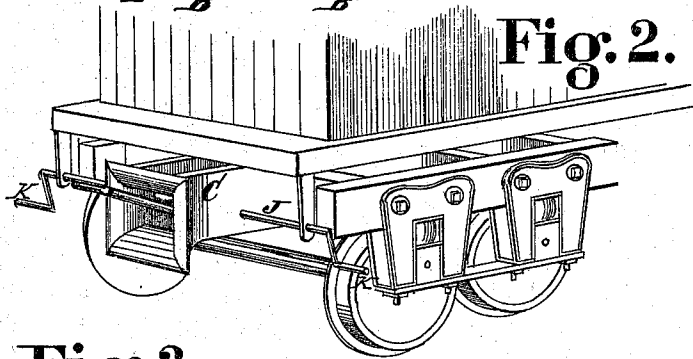
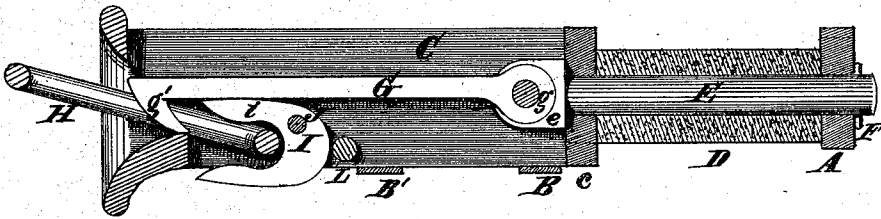


Fig. 3.



Attest;

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UNITED STATES PATENT OFFICE.

THOMAS FIRTH AND JOHN W. HOLLIS, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-FOURTH OF THEIR RIGHT TO SAMUEL CUMMINGS AND J. P. CUMMINGS.

IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. 131,673, dated September 24, 1872.

To all whom it may concern:

Be it known that we, THOMAS FIRTH and JOHN W. HOLLIS, both of Cincinnati, in the county of Hamilton, State of Ohio, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification:

Nature and Objects of Invention.

Our invention consists, first, in a peculiar combination of coupling-link, coupling-socket, swinging dog, and vibrating lifter, adapted not only to receive and support the link, but also to lock said link in position and elevate the outer end of the link to fit or enter the link-socket of another car in which the socket is higher or lower; second, in the provision of an extended shaft and crank, or equivalent, for operating this class of couplings upon the outer side of the car.

Description of the Accompanying Drawing.

Figure 1 is a vertical section of my improved coupling in the act of receiving the link. Fig. 2 is a perspective view of the end of the car with my improved coupling attached. Fig. 3 is a vertical section of my improved coupling in the act of raising the link to connect with a coupling of higher elevation or another car.

General Description.

The bar or timber A is firmly attached to the bottom of the car, and forms the part of the load against which the pin of the draw-bar acts. Two straps, B B', are also secured to the bottom of the car to support the sliding link-socket C, which has a head, c, to press against the bumper or spring D, located between this head and the stationary projection from the bottom of the car, illustrated by the letter A, before referred to. E is the draw-bar, which is constructed to slide through the bumper D. It also, when the bumper is being compressed, slides through the bar A. F is the pin of the draw-bar, which takes up the load. To the head c of the draw-bar E the swinging dog G is hinged at g, the outer end of the dog being provided with a hook, g', to engage with the interior of the link H,

as shown clearly in Figs. 1 and 3. I is a double-arm lifter, the U-shaped interior of which receives the link, the lower arm of the lifter serving to prevent the displacement of the link in entering. The upper side of the upper arm i of the lifter acts against the under side of the dog G, and the lower side of the said arm acts upon the link in such a way that when it is required to lift the outer end of the link in order to facilitate the connection of the same with another car of different elevation, the downward motion of this arm accomplishes it, as shown in Fig. 3; and this provision for lifting the link in the manner stated is of the greatest importance where cars of varying elevations are brought together. The shaft J operates this double-arm lifter by means of a crank, K, or equivalent, at the side of the car. By reason of this provision of the crank K in the location stated, in connection with the operation of the lifter I, it is unnecessary for the brakeman or other person whose business it is to couple or uncouple the cars to go between the cars to do it, and thus accidents to such operators, hitherto so frequent, are perfectly guarded against. The upper arm i of the lifter elevates the dog G for the reception of the link into the coupling, and upon its return the dog falls so as to allow the hook g' to engage with the interior of the link. The elevation of the dog is also automatically accomplished by the forcible entrance of the link into the coupling, the rounded end of the link operating upon the beveled end of the dog G for this purpose.

In the operation of the bumper the rubber is compressed by the motion of two cars in the direction of each other, but is not elongated by the strain of the draw-bar in propelling the car. The back of the lifter I may be of such a configuration that it will at all points, whether up or down, press against the pin L to resist any accidental inward strain that may be brought to bear against the lifter in the coupling of the cars or otherwise. The bottom arm of the lifter I may in some cases be made much shorter than shown in the drawing, so much so as to barely prevent the displacement of the link in entering; but it is important that the upper arm should have

such projection from the U-shaped or other shaped bottom of the lifter that it will on its upper side elevate the dog G, and on its lower side act upon the link H in the manner stated.

Claims.

1. A coupling, comprising in its construction a link-socket, C, gravitating-dog G, and lifter I, the latter being adapted not only to raise the dog, but to depress the inner end of the link, as and for the purpose specified.

2. The elements enumerated in the first claim,

in combination with the shaft J, extending to the side of the car, and fitted with crank K, or other equivalent operating device, substantially as and for the purpose specified.

In testimony of which invention we hereunto set our hands.

THOS. FIRTH.
JOHN W. HOLLIS.

Witnesses:

FRANK MILLWARD
H. G. WEBBER.