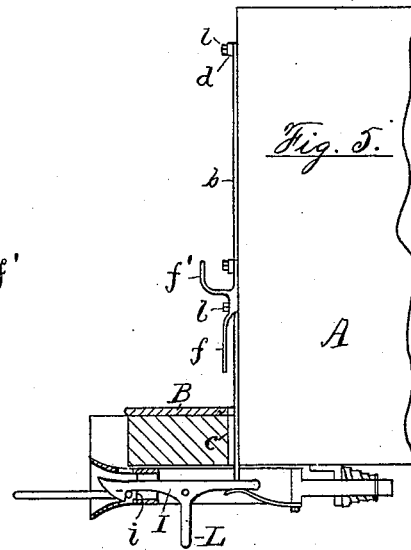
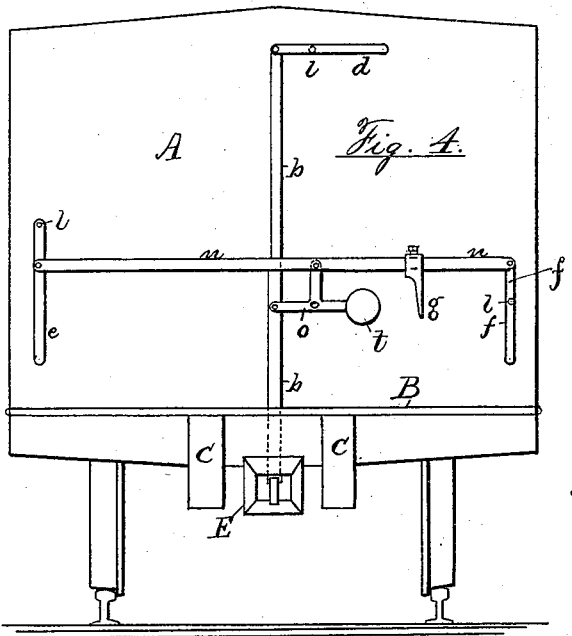
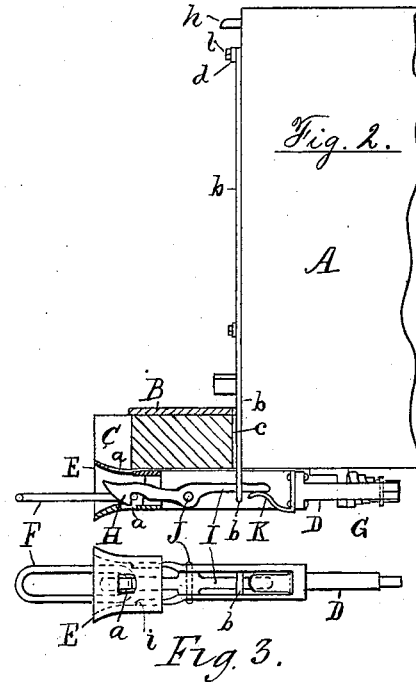
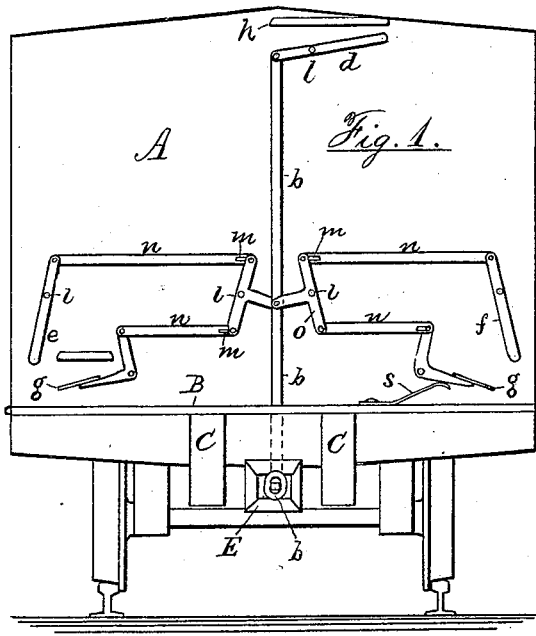


(No Model.)

D. M. HARRIS.  
CAR COUPLING.

No. 267,344.

Patented Nov. 14, 1882.



Attest:

Wm. D. Crane

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# UNITED STATES PATENT OFFICE.

DAVID M. HARRIS, OF NEWARK, NEW JERSEY.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 267,344, dated November 14, 1882.

Application filed March 6, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID M. HARRIS, a citizen of the United States, residing in the city of Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Car-Couplings, fully described and represented in the following specification, and the accompanying drawings, forming a part of the same.

10 This invention relates to an improvement in railway-car couplings; and it consists in improved means for operating upon a pivoted lever, combined with a draw-head, a coupling-link and gripping-hook.

15 It also consists in the combination, with the hook-operating devices, of a foot-plate or treadle for use by the brakeman when making flying switches.

20 In the drawings, Figures 1 and 4 show end elevation of a car with my devices attached. Figs. 2 and 5 show parts of a car's end in section on its center line, and Fig. 3 shows a plan of the draw-head detached from the platform. The form of the draw-bar being that commonly  
25 employed, and the means for attaching it to the platform being well known, the latter are not shown in the drawings.

30 A is the end of a freight-car, to which alone my invention is applicable, as it involves the use of a vertical rod, *b*, applied to the end of the car at the middle of its width, where the door of passenger-cars is commonly placed.

35 B is the platform; C, the buffers usually applied to freight-cars; D, the draw-bar; E, the draw-head; F, the ordinary coupling-link originally devised to use with a loose pin; G, the spring of the draw-bar; H, the hook for gripping the link automatically, and I a pivoted lever heretofore used for carrying such a hook.

40 J is a pivot or cross-pin, upon which the lever plays; and K a spring applied to the tail of the lever I, to press the hook downward and make it hold the link F securely. The hook is formed upon the forward end of the lever,  
45 and stands in the mouth of the draw-head E in such position that it is automatically raised by any link forced therein, and closed thereon by the force of the spring K when the end of the link has passed beyond the inclined front  
50 end of the hook. A hook similarly pivoted and provided with a spring has been already used to engage an opposite hook; but as such

a device can only be used with a series of cars entirely provided with such couplings, it is obvious that it is not adapted to freight-cars, 55 which are transferred to various railroads using the common link and pin. I have therefore devised the improvement shown herein, which affords great facilities for operating with the ordinary coupling-link shown in the 60 drawings at F, and permits the cars provided with my invention to be coupled to any others using such a link. I also employ a direct connection to the rear end of the lever I, in the place of devices projecting from the wall of the 65 car out to the edge of the platform, to accomplish which I form a mortise, *c*, through the platform and extend the operating-bar straight through it, while the means heretofore used for placing the hook under the control of the train- 70 man consisted of cord or chain passed over pulleys, or of other devices operating differently from mine.

The moving device employed by me consists in a vertical sliding bar, *b*, secured to the end 75 wall of the car and extended downward through the platform into contact with the tail end of the lever I, and the said bar being provided with hand or foot levers for detaching the hook from the coupling-link, when desired. 80

*d* is a lever connected to the bar *b* at its upper end, the fulcrum *l* and the body of the lever being placed beneath the top of the car, to avoid contact with any passing object.

*e* and *f* are hand-levers placed at the right 85 and left hand sides of the car, upon its end wall, and connected to the bar *b* by link *n* and bell-crank *o*. In Fig. 1 separate bell-cranks are shown for each hand-lever, thus securing the same inward movement upon the lever at 90 either side to press down the bar.

In Fig. 1 a single bell-crank is shown, and both hand-levers *e* and *f* are connected to it by a long link extending all the way from one lever to the other, and crossing the bar *b* in 95 its passage.

To secure an inward movement for both the hand-levers in this arrangement, one is pivoted above the link and one below, thus making the levers one of the first and one of the second 100 order. The lever at the top of the bar is within easy reach of a man on the top of the car, as those at the sides are accessible to a man on the ground, not between the cars, and

the coupling can thus be detached with great facility. When standing upon the platform of the car and looking out to uncouple the cars for a flying switch the trainman is not able to use his hands easily, as his body is often extended beyond the side of the car and needs the support of both his hands.

To facilitate the uncoupling at such times, I connect with my device a treadle or foot-plate, in some convenient location for the operator to press it with his foot, and thus detach the coupling without withdrawing either his hands or his eyes from other necessary occupation at such times.

In Fig. 1 a treadle, *g*, is shown pivoted by a bell-crank or bent lever to each side of the car, and connected by a link, *n'*, to an arm formed upon the bell-cranks *o*. The bar *b* is thus moved by the treadles in the same manner as by the levers *d*, *e*, and *f*. Two other means of applying the foot to move the bar are shown in Fig. 2. In this figure a foot-plate, *g*, is shown secured by a set-screw to the link *n*, and the trainman can thus push the bar by extending his foot backward while standing upon the edge of the platform. The same convenience for applying the foot can be secured by bending the top of the hand-lever outward, as shown at *f'* in Fig. 4, and also in the adjacent edge view shown in Fig. 5. The projection of the lever's top from the wall of the car forms a kind of stirrup, in which the foot rests firmly while the trainman watches for the exact moment to uncouple the cars.

To prevent accidental contact with the levers employed, guards of wood or iron-plate may be secured to the wall of the car near them and project enough beyond the levers to secure them from derangement. Such guards are shown at *h* in Figs. 1 and 2.

To preserve the efficiency of the draw-head in case of accident to the hook *H* or any of its moving apparatus, holes *a a* are formed in the top and bottom sides of the head *E*, for the insertion of a common coupling-pin. The head may then serve for temporary use until such time as the broken parts are restored.

The socket in the draw-head is formed with shoulders *i*, against which the end of the link *F* abuts when it has entered a suitable distance. It is thus held by the grip of the spring operating at the tail end of the lever *I* in a proper position to enter any other draw-head similarly constructed, and would then be automatically coupled to the opposite hook, *H*, or could be coupled, if necessary, to any car furnished with the common pin and coupling-socket.

The advantage of my construction is thus obvious, as it may be used in connection with cars not provided with my device, and may be used with the previously-known pin if the novel attachments shown herein are disordered and the hook removed from the draw-head to permit the insertion of the pin through the holes *a a*. For moving the lever *I* in such emergencies, and thus retaining the use of the hook, a handle, *L*, may be attached to the lever and extend downward beneath the platform or draw-bar, where it can be reached by hand, if needed.

Should the combined weight of the various levers and links attached to the bar *b* not balance the downward tendency, the same may be neutralized by a spring, *s*, as shown in Fig. 1, or by a weight or weights, as shown attached to the bell-crank *o* at *t* in Fig. 4.

I am aware that it is not new to use various systems of levers for operating coupling devices, nor to project a bar through the platform for operating a coupling-hook; and I do not therefore claim such mechanism, except in the combinations devised by me.

I am also aware that a hook and spring-lever similar to mine have been used heretofore, as in Patent No. 159,372, issued February 2, 1875; and I do not therefore claim the same as my invention, but only the combination therewith of the vertical bar *b* operated by the hand and foot levers described.

Having shown the advantages of my special construction, I desire to claim and secure the same by Letters Patent, as follows:

1. The combination, with the spring-lever hook *H I K*, of the vertical bar *b* and hand-levers *d*, *e*, and *f*, the bar *b* passing directly through the platform, and the whole arranged and operated in the manner shown and described.

2. The combination of the hand-levers *d*, *e*, and *f*, with the foot-plate or treadle *g*, arranged and operating as described, for moving the bar *b* by hand or foot pressure, substantially as shown and described.

3. The combination, with a device for working a car-coupling, of a foot-plate or treadle connected therewith and operating to uncouple the car when making a flying switch, substantially as shown and described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

DAVID M. HARRIS.

Witnesses:

THOS. S. CRANE,  
WM. F. D. CRANE.