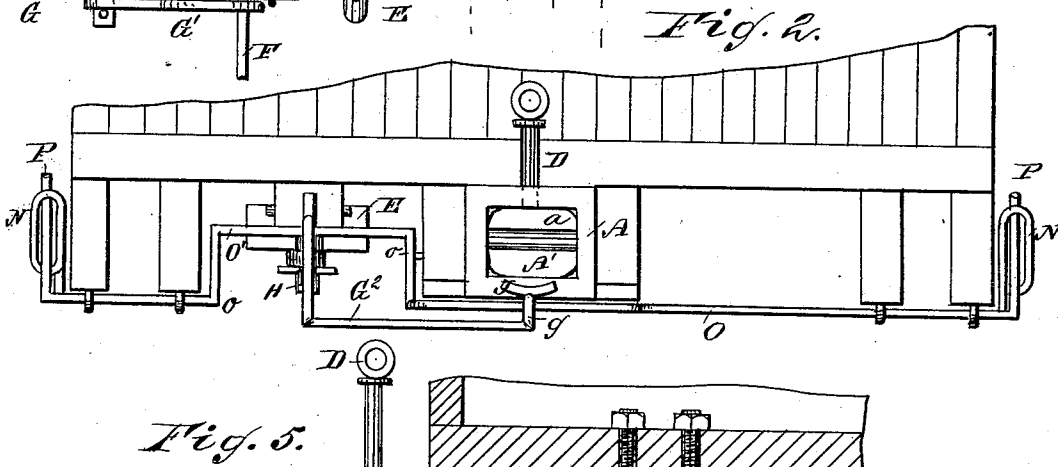
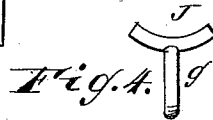
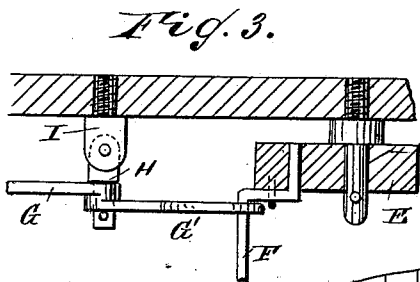
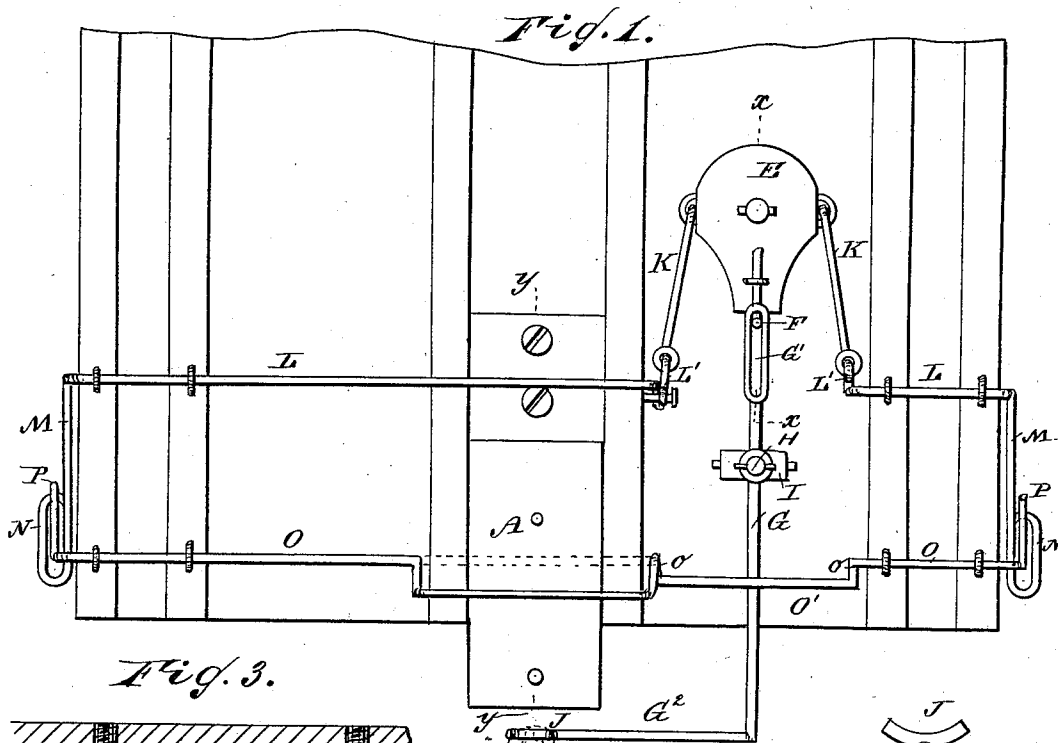


(No Model.)

W. H. DIEHL.  
CAR COUPLING.

No. 273,475.

Patented Mar. 6, 1883.



**WITNESSES :**

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# UNITED STATES PATENT OFFICE.

WILLIAM H. DIEHL, OF HYDE PARK, PENNSYLVANIA.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 273,475, dated March 6, 1883.

Application filed January 10, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. DIEHL, of Hyde Park, in the county of Lackawanna and State of Pennsylvania, have invented a new and Improved Car-Coupling, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved car-coupling having devices for lifting the link and guiding it laterally.

The invention consists in the combination, with a car, of a bar pivoted to the under side of the same in such a manner that it can swing vertically and laterally, which bar is provided at its outer free end with a device for holding the link, whereby by moving the said bar the link can be guided into the draw-head. The said bar is provided at its inner end with a longitudinal loop or slot, through which an arm passes which projects from a block pivoted to the under side of the car in such a manner that it can swing laterally, to which block connecting-rods are pivoted, which are connected with rods held to turn on the upper side of the car and extending to the sides of the same, whereby by turning the said rods the said pivoted block and the link-supporting device can be moved laterally. A rod or shaft provided with a crank part is held on the under side of the car to turn below the link-supporting device for the purpose of lifting the link.

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 plan view of the under side of one end of a car provided with my improved car-coupling. Fig. 2 is an end view of the same. Fig. 3 is a longitudinal sectional elevation of the same on the line *x x*, Fig. 1. Fig. 4 is an end elevation of the hook for moving the link laterally. Fig. 5 is a longitudinal sectional elevation through the draw-head on the line *y y*, Fig. 1.

A draw-head, A, of the usual construction, is fastened in the usual manner, either fixed or yielding, to the bottom of the car, and contains a sliding block, A', provided at its front end with a transverse groove, *a*, for receiving the end of the coupling-link, and at the rear

end with a spindle, *b*, which passes into a recess or opening, *c*, in the draw-head, and is surrounded by a spring, B, which rests against the inner end of the block A' and against a transverse piece, C, in the draw-head, and thus presses the block A' outward.

The coupling-pin D can rest on the block A', as shown in Fig. 5, and when the link enters it pushes the block A' inward and from under the pin, which can drop and pass through the link; but it is also necessary to provide devices for guiding the link into the draw-head, and for this purpose a block, E, is pivoted to the under side of the car in such a manner that it can swing in a horizontal plane, and at the end toward the end of the car it is provided with a downwardly-projecting arm or rod, F, which projects through a longitudinal slot, G', in the inner end of a bar, G, which is pivoted to the under side of the car in such a manner that it can swing vertically and laterally—that is to say, it is pivoted to swing laterally on a pintle, H, which is pivoted to jaws I, held on the under side of the car. At its outer end the said bar G is provided with a rectangular bend, G<sup>2</sup>, which extends to the middle of the front end of the draw-head A, and at the end of the rectangular bend G<sup>2</sup> it is provided with an upward bend, *g*, which is provided at its upper end with a curved crutch, J.

To each side of the block E connecting-rods K are pivoted, which are also pivoted to crank-arms L' at the inner ends of transverse shafts or rods L, held to turn on the under side of the car and extending to the sides of the same, which shafts or rods are provided at their ends at the sides of the car with arms M, terminating in elongated loops N, or provided with longitudinal slots as equivalents for the loops N, which arms M serve for turning the rods L.

A transverse shaft, O, is held to turn on its longitudinal axis on the under side of the car, and is provided at its ends with crank-arms P, which extend through the loops N. The part O' of the rod O below the rod G is out of the center of the rotation of the shaft O; or, in other words, the part O' is connected with the rod O by means of crank-arms *o*, connecting the ends of the part O' with the shaft O, whereby, if the shaft O is turned, the part O' will describe a quarter-circle, and as the rod G is

above the part O' the said rod G will be raised or lowered accordingly as the shaft O is turned.

The operation is as follows: By swinging the arms M the block E can be swung to the right or left, and as it acts on the rod G the outer end of the rod G will be swung accordingly. The end of the link to be guided rests on the crutch J, and as the crutch J is moved transversely more or less in front of the outer end of the draw-head the end of the link supported by the crook will be moved accordingly, and thus a link can easily be guided to have the proper position in relation to the width of the front end of the draw-head.

For the purpose of elevating the end of the link, I have provided the transverse rod O, for by turning the same the part O' will be raised or lowered more or less, and consequently the arm G<sup>2</sup>, carrying the link at its end, will also be raised or lowered as the rod G rests on the part O' of the rod O. The arms P of the rod O pass through the slots or loops N of the arms M of the rods L, so that both devices can be operated by one hand, as the two handles are so close together that they can easily be seized together.

My improvements can be attached to any draw-head, and as none of the parts for guiding the link are attached to the draw-head the draw-head can be removed and replaced without affecting the other mechanism.

My improved car-coupling can be applied to any and all draw-heads without changing the link or pin and without requiring a new draw-head or drilling holes into the old one.

My coupling lifts the link up and down any required height and shifts the link to right or left any required distance, whereas other car-coupling devices only lift the link.

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

1. The combination, with the block E, pivoted to the under side of the car to swing laterally, of the arm F, the bar G, provided with the slot or loop G' and pivoted to the under side of the car, the connecting-rods K, and the rod L connected with the rods K and extending to the sides of the car, substantially

as herein shown and described, and for the purpose set forth.

2. The combination, with the block E, pivoted to the under side of the car to swing laterally, of the arm F, the bar G, provided with the slot or loop G', and pivoted to the under side of the car to swing laterally and vertically, and provided at its free end with a device for holding a link, the connecting-rods K, the rods L, extending to the sides of the car, and the rod O, pivoted to the under side of the car, and provided with a crank part, O', below the rod G, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the block E, pivoted to the under side of the car to swing laterally, of the arm F, the bar G, provided with the slot or loop G', and pivoted to the under side of the car to swing laterally and vertically, and provided at its free end with a device for holding a link, the connecting-rods K, the rods L, extending to the sides of the car, and provided at the ends with arms M, having loops or slots N, and of the shaft O, provided with a crank part, O', and at the ends with arms P, extending through the slots or loops N, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the block E, adapted to swing laterally on the under side of the car, of the bar G, provided at its inner end with the loop or slot G' and at its outer end with the devices for holding a link, of the pintle H, on which the bar G turns laterally, and of the jaws I, to which the pintle H is pivoted, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the block E, pivoted to swing laterally on the under side of the car, of the bar G, pivoted to swing laterally and vertically, the arm G<sup>2</sup> at the end of the bar G, and the crutch J at the end of the arm G<sup>2</sup>, substantially as herein shown and described, and for the purpose set forth.

WILLIAM H. DIEHL.

Witnesses:

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JOHN L. LOWRY.