(No Model.)

N. W. HAWKENSON.

CAR COUPLING.

No. 334,863. Patented Jan. 26, 1886.

Fig. 1.

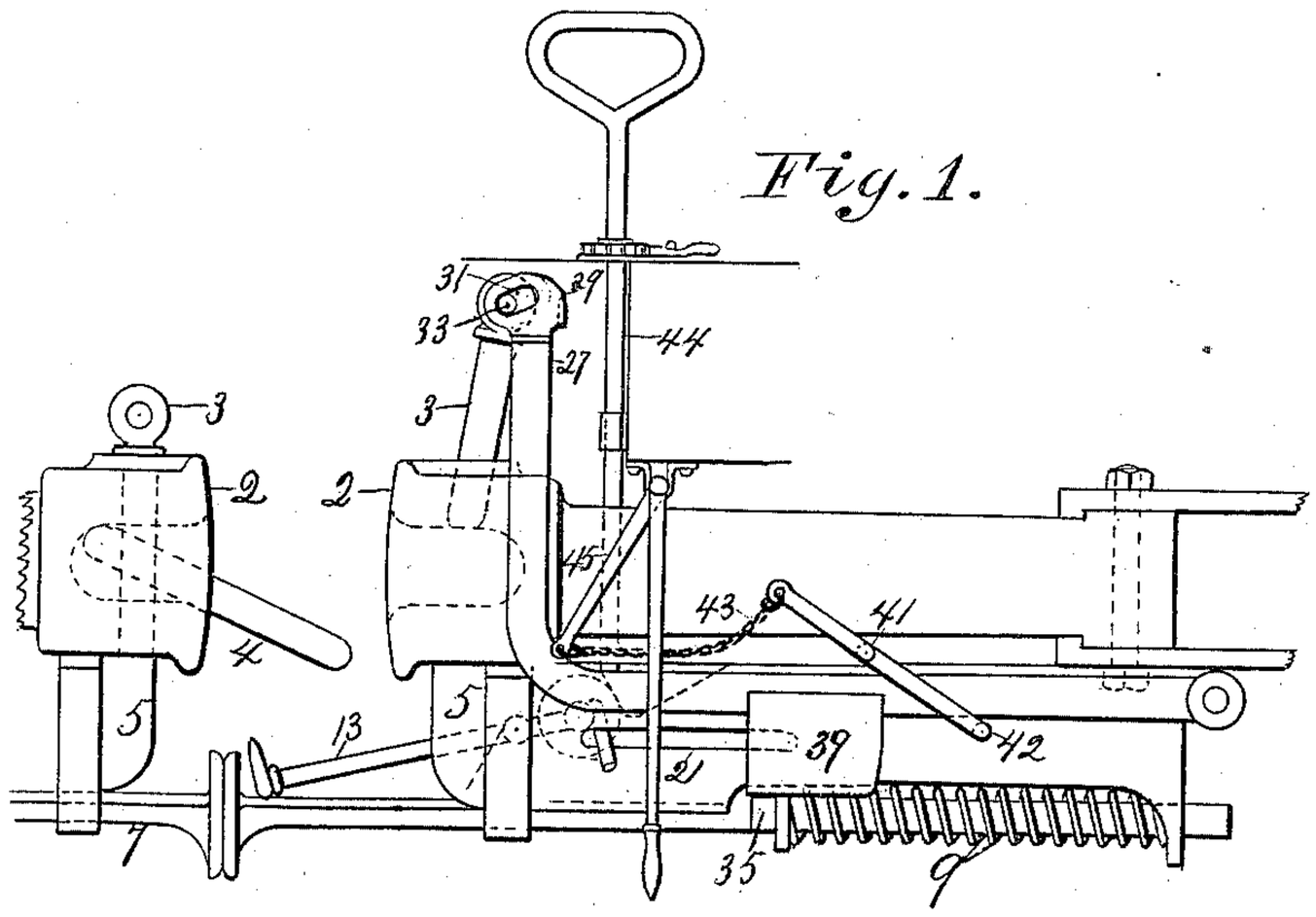


Fig. 2.

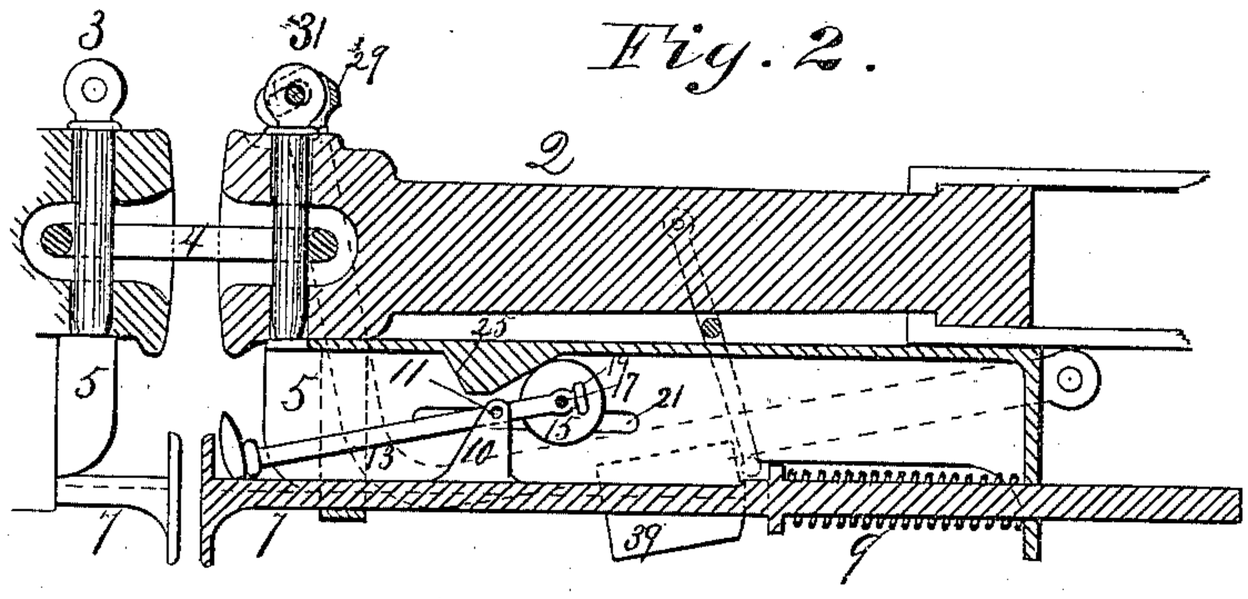
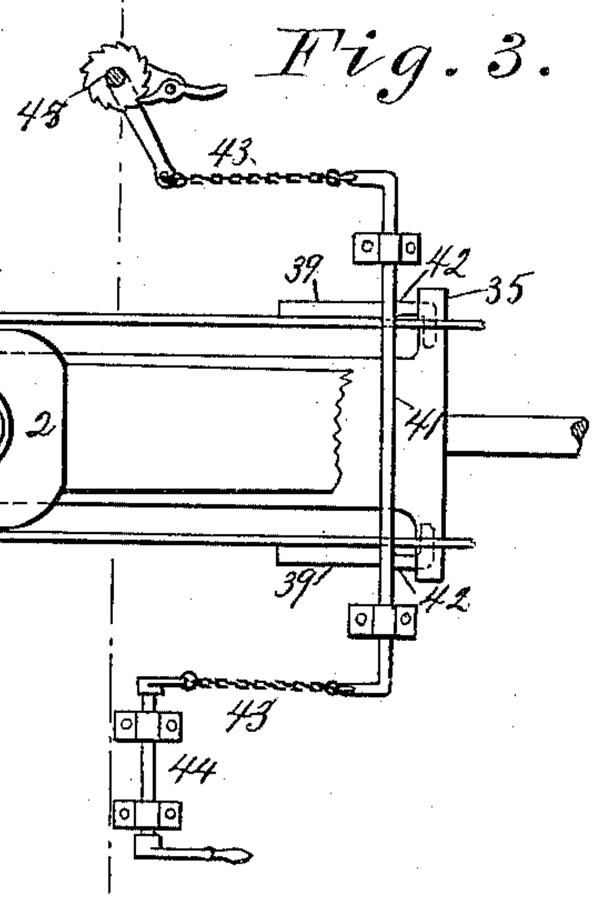


Fig. 3.



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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 334,863, dated January 26, 1886.

Application filed September 16, 1885. Serial No. 177,230. (No model.)

To all whom it may concern:

Be it known that I, NELS W. HAWKENSON, a citizen of the United States, and a resident of Litchfield, in the county of Meeker and State of Minnesota, have invented certain Improvements in Car-Couplers, of which the following is a specification.

My invention relates to a new coupler for automatically coupling freight-cars; and the objects I have in view are, to provide an attachment for a car that will form an automatic coupling while making use of the ordinary draw-head, link, and coupling-pin.

To the above ends my invention consists, generally, in the construction and combination of devices hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of two of my improved couplers in position for coupling. Fig. 2 is a section of one coupling and a partial section of another, with the parts coupled together. Fig. 3 is a detail.

In the drawings, 2 2 represent the draw-heads, 3 3 the coupling-pins, and 4 the coupling-link, all of ordinary construction.

The means for coupling consists of two principal parts—the device for holding the pin in an elevated position and permitting it to pass through the link after the link has entered the draw-head, and the means for raising the link and directing it into the draw-head.

5 represents a suitable casing for the attachment. It is preferably of the rectangular form shown and of nearly the same length and width as the draw-head, and it is secured beneath the draw-head by any suitable means.

7 represents a spring-buffer by which the link-lifter is operated. This buffer is arranged in the lower part of the casing and projects therefrom. It is provided with a projecting rod, which extends through the end of the casing and is surrounded by a spring, 9, which bears against the end of the casing and against a shoulder on the buffer. The buffer 7 is provided upon its upper surface with a projection, 10, to which the link-lifting arms are pivoted by a loose pivot, 11. This pivot preferably consists of a pin passing loosely through the projection 10, and having eyes at its ends through which the arms 13 13 extend, being adapted to turn freely therein. In the rear of the projection 10 is a wheel, 15, mounted loosely on a pin, 17, which has eyes 19 at its ends, through which the arms 13 13 extend, said arms being adapted to turn freely therein. The rear ends of arms 13 extend outwardly through the slots 21 in the casing 5. The forward or outer ends of the arms 13 are provided with the outwardly-extended and preferably curved portions, and these ends are preferably secured together by a suitable link. The casing 5 is provided with the inclined projection or surface 25 in the rear of the normal position of the wheel 15.

27 represents the pin holder and lifter consisting of a bent metal strip that extends over the draw-head above the pin-hole, then down each side of the draw-head and along the casing to about the rear end thereof, where it is pivoted either directly to the casing or to a projection therefrom. The pin-lifter has the projections 29 upon each side of the pin 3, and in these projections are the oblique slots 31, through which a pin, 33, passes. This pin also passes through a hole in the upper part of the coupling-pin 3. The buffer 7 is also provided with the projections 35, that extend laterally beyond the walls of the casing. The pin-lifter 27 has the downwardly-projecting wings 39, which, when the buffer is projected, rest on the projections 35 and hold the coupling-pin in an elevated position. When the buffer is pushed into the casing, the wings on the pin-holder drop in front of the projections on the buffer and hold the buffer in its retracted position. When the pin-holder drops to this position, the coupling-pin drops through the link and holds it in the draw-head.

Suitable means are provided for raising the pin-holder, and with it the coupling-pin, either from the side or the top of the car. I have shown one means for this purpose, consisting, essentially, of a rod, 41, provided with arms 42, that are arranged to engage the pin-holder. This rod is connected by suitable chains, 43, with a rod or rods, 44, that may be operated from either side of the car, and with a vertical rod, 45, that can be operated from the top of the car.

The buffer 7 is provided with a suitable head, which engages the similar head on the buffer of the next car.

The operation of the device is as follows:

The coupling-link being held in one draw-head, the spring-buffer 7 of that car will be retracted, as shown at the left hand in Fig. 1. The spring-buffer 7 of the other car encounters the similar buffer of the car carrying the link. This buffer is pushed back, and, as it moves back, the roll or wheel 15 passes over the inclined surface of the projection 25, and the forward ends of the link-lifting arms 13 are thereby raised, and their curved ends are turned in toward each other as the arms at their opposite ends move in the slots in the walls of the casing. This movement of the arms raises the end of the link and directs it into the draw-head, and this will be done even though the cars are on a curve or one draw-head is out of the center, so that the link is not presented to the center of the opposite draw-head, the curved arms bringing it into the proper position. The end of the link passes into the draw-head under the end of the coupling-pin, and when the projections on the buffer have passed from under the wings on the pin-lifter, the pin-lifter and pin drop and the pin passes through the link, the wings drop in front of the projections on the buffer and hold the buffer in its retracted position till the pin lifter is raised, when the spring will throw the buffer out to its former position. To raise the pin-lifter, it is merely necessary to operate one of the rods extending to the sides of the car or the rod extending to the top of the car. The diagonal slots in the projections on the top of the pin lifter permit the pin to be raised, and at the same time to maintain a vertical position.

When it is desired to couple a car that is not provided with the link-lifter, the link may be guided into the draw-head by any suitable means, and the buffer may be pushed back to permit the pin to drop through the link. The curved ends of the lifting-arms clasp the sides of the link and prevent its being thrown too far up to enter the draw-head.

The coupler will work even though one car is considerably higher than the other.

It will be seen that this coupler is exceedingly simple in construction, that the attachment can be readily applied to any car having the ordinary coupler, and that its operation is entirely automatic. The vertical rod 45 is preferably provided with a ratchet and pawl, and by means of this the rod may be set to hold the pin-lifter and pin in an elevated position.

I claim—

1. In an automatic car-coupler, a link-lifter comprising a spring-buffer with arms pivoted thereto and a stationary inclined surface, whereby as said buffer is pushed back the forward ends of the arms are raised, substantially as described.

2. In a car-coupler, the spring-buffer 7, carrying the pivoted arms 13, the wheel 15, and the stationary inclined surface 25, substantially as described, and for the purpose set forth.

3. In a car-coupler, the casing 5, having slots 21, and having the incline 25, in combination with spring-buffer 7, pivoted arms 13, having the curved forward ends, and the rear ends extending through the slots 20, and the wheel 15, all substantially as described.

4. The combination, with the draw-head 2, of the spring-buffer 7, carrying the pivoted link-lifting arms 13, and means for raising the forward ends of said arms as the buffer is pushed back, substantially as described, and for the purpose set forth.

5. The combination, in a car-coupler, with the draw-head 2, of the pin-lifter 27, pivoted beneath said draw-head and extending across the top thereof, the projections 29 on said pin-lifter having the diagonal slots 31, the coupling-pin 3, and a pin passing through said coupling-pin and through said diagonal slots, all substantially as described, and for the purpose set forth.

6. The combination, in a car-coupler, with the spring-buffer 7, having the projections 35, of the pin lifter and holder 27, having the wings 39, and means for raising said pin-lifter, all substantially as described, and for the purpose set forth.

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