

(No Model.)

C. E. WARD, Dec'd.

L. E. WARD, Administrator.

CAR COUPLING.

No. 551,015.

Patented Dec. 10, 1895.

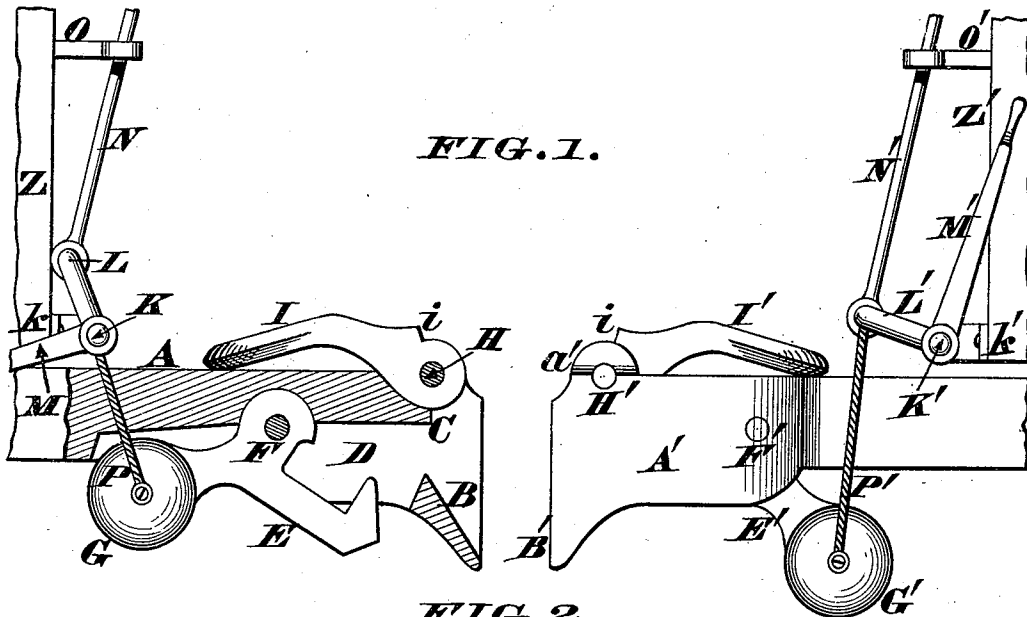


FIG. 1.

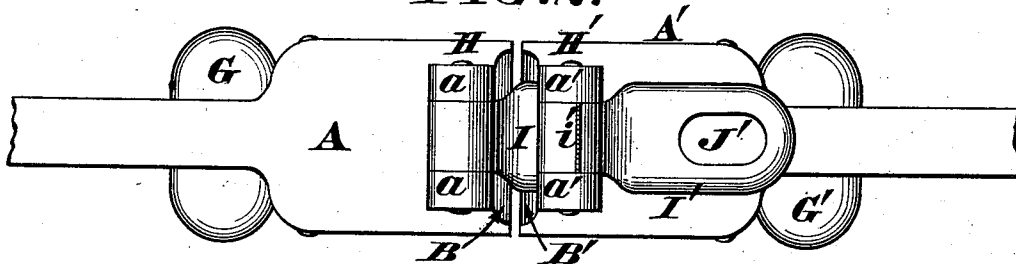


FIG. 2.

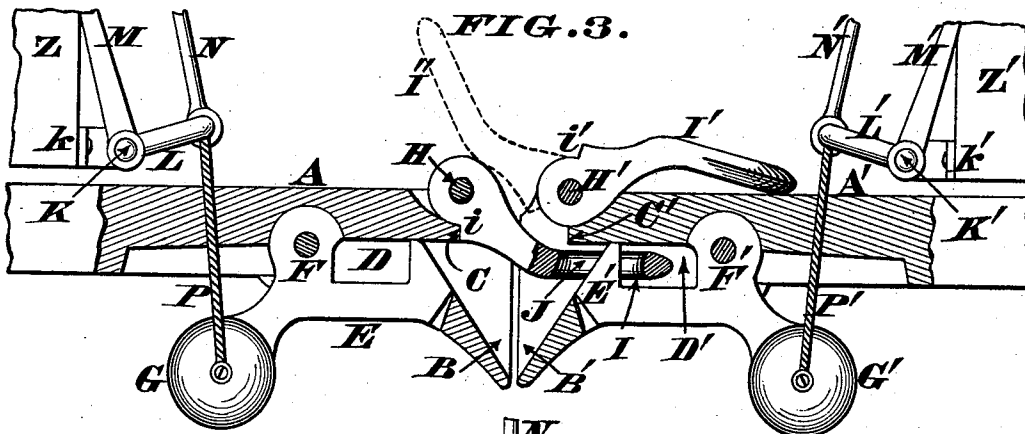


FIG. 3.

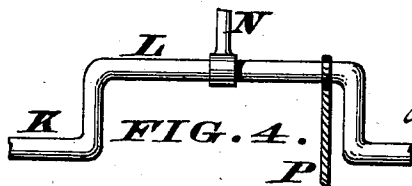


FIG. 4.

Attest.
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Att'y.

UNITED STATES PATENT OFFICE.

LEWIS E. WARD, OF MILTON, INDIANA, ADMINISTRATOR OF CHARLES E. WARD, DECEASED, ASSIGNOR OF ONE-HALF TO ISAAC KINSEY, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 551,015, dated December 10, 1895.

Application filed June 24, 1895. Serial No. 553,894. (No model.)

To all whom it may concern:

Be it known that CHARLES E. WARD, late of Milton, in the county of Wayne and State of Indiana, was in his lifetime the inventor of certain new and useful Improvements in Car-Couplings, and I, LEWIS E. WARD, of the same place, as administrator of the estate of the said CHARLES E. WARD, do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the annexed drawings, which form part of this specification.

The aforesaid car-coupling includes two separate and distinct members—to wit, a self-closing hook and a swinging shackle—which shackle is provided with a shoulder, the hook being pivoted near the rear end of the draw-head and being normally in a proper position to permit an automatic coupling of a car. The shackle is also pivoted to the draw-head, but near the front end or mouth of the same, and its free end is capable of being swung back until it rests upon said head.

The coupling is effected by swinging forward this free end of the shackle and causing its shoulder to come in contact with a stop of the draw-head, so as to readily enter the mouth of an opposing draw-head, at which moment said shackle automatically engages with a self-closing hook of said head, as hereinafter more fully described.

Another feature of said invention includes a novel combination of devices which enable the coupling to be operated from either side of a car or from the roof of the same, as hereinafter more fully described.

In the annexed drawings, Figure 1 represents a pair of opposing draw-heads provided with the couplings above referred to, one of said heads being sectioned and the other head shown in elevation. Fig. 2 is a plan showing said heads coupled together, the devices that operate the hooks being omitted. Fig. 3 is a longitudinal section of these coupled heads. Fig. 4 shows the central portion of a rock-shaft that operates the hook of a draw-head.

The draw-head, which may be of any desired size, shape, and material, is shown at A, and has a mouth B, stop C, and longitudinal slot D, within which latter a self-closing hook E swings freely up and down, being hung upon

a pin F, secured transversely of said head. G is a weight at the rear end of this hook for the purpose of normally maintaining it in the position seen in Fig. 3. Projecting from the top of this draw-head A and near its mouth are ears *a a*, within which a pin H is so fitted as to serve as a pivot for the swinging shackle I. This shackle is bent in the manner shown, is rounded at its free end, and has a shoulder *i* and longitudinal slot J, the shackle being at all times guarded against any possible engagement with the hook E, because said hook vibrates wholly through the bottom of the draw-head and has no projection above the latter.

The above is a description of the draw-head and coupling devices applied to the car Z, which devices are exactly duplicated on the other car Z', as seen at A', B', C', D', E', F', G', H', I', J', *a'*, *a'*, and *i'*.

The draw-head hooks E E' may be operated in any convenient way; but in order that they may be opened from either side of a car or from the roof of the same it is preferred to use a rock-shaft K, having a cranked central portion L, as clearly seen in Fig. 4. This rock-shaft is journaled in bearings *k k'*, has levers M M' secured to its ends, and a shifting-rod N coupled to its cranked portion L.

O O' are guides projecting from the ends of the cars and having slots or eyes, through which the shifting-rods N N' pass freely.

P P' are chains or wire ropes that connect the weights G G' to the cranked portions L L' of the rock-shafts K K'.

The normal condition of the coupling is seen in the draw-head A in Fig. 3, reference to which illustration shows that the crank L is now swung down, thereby leaving the weight G at liberty to perform its duty, the result being to retain the hook E in a proper position for immediate action when two cars are brought together. Again, in this normal position of the coupling the shackle I is turned down until it becomes practically horizontal, in which position it is held by the shoulder *i* of said shackle coming in contact with the stop C of the draw-head. Such being the positions of the various operative parts, it is evident that when the two cars Z Z' are brought together the front or rounded end of the shackle I will automatically engage with the hook E'

of the opposing draw-head A', and thus connect said cars without compelling a person to get in between them.

The above describes the operation of the coupling when the opposing shackle I' is thrown back on the draw-head A'; but if said shackle should also be in a horizontal position when the cars are brought together there will be no conflict between the devices I I', because one of them will be certain to ride up over the other and leave the lower shackle free to perform the coupling act. This result is due to the fact that the free ends of the shackles are so shaped as to afford glancing or deflecting surfaces both horizontally and vertically. The upturned position of the shackle I' is indicated by the dotted lines I'' in Fig. 3.

To uncouple the cars, it is necessary only to grasp either of the levers M or M' and force them down until the rock-shaft K turns so far as to raise the crank L and bring it in contact with the end of the car Z, as seen in Fig. 1, which act liberates the hook E from the shackle engaged therewith and while the operator stands in a perfectly safe position; or this uncoupling can be effected from the car-roof by first pulling up on the shifting-rod N to elevate the crank L and then throwing the upper end of said rod rearwardly, so as to cause said crank to rest against the end of the car. There is no need of a catch to hold the crank against the car, because said crank now occupies a position at one side of the axis of the rock-shaft K and is maintained there by the combined weight of the three devices G, M, and N.

The shackles I I' can occupy the positions seen in Fig. 1 when the cars are not in use, or when either one of them happens to be at the rear end of a train, in which event the vibrations of the draw-head cannot throw the shackle over to a horizontal position, because the weight of this device I is so far from its pivot F. Furthermore, these shackles can

be maintained in the positions seen in Fig. 1 whenever circumstances may render it necessary to use an ordinary coupling-link, in which emergency such a link would be engaged with the pair of hooks E E' in precisely the same automatic manner as the shackles do. Finally, it is evident that the rock-shaft, shifting-rod, levers, and chains can be omitted and other suitable means be employed for opening the hook E, and a spring may be substituted for the weight G; but the latter is preferred for many reasons.

I claim as the invention of the late CHARLES E. WARD—

1. A car-coupling including the draw-head A, having a mouth B, stop C, and longitudinal slot D; a self-closing hook E, vibrating within said slot; and a slotted shackle I J, pivoted to the upper part of said head, and having a shoulder i, for the purpose described.

2. The combination, in a car-coupling, of the draw-head A, having a mouth B, stop C, longitudinal slot D, and a pair of pivots F, H; a hook E, hung upon the pivot F, and vibrating in said slot D; a weight G, at the rear end of said hook; and the slotted shackle I J, hung upon the other pivot H, and provided with a shoulder i, all as herein described, and for the purpose set forth.

3. In combination with a self-closing hook E, vibrating within a draw-head, in the manner described, the rock-shaft K, having a cranked portion L; the levers M, M', and shifting-rod N, applied to said rock-shaft, in the way set forth; and the flexible device P, that connects said shaft-crank with the rear end of said hook; all as herein illustrated and explained.

In testimony whereof I affix my signature in the presence of two witnesses.

LEWIS E. WARD,

Administrator of estate of Charles E. Ward.

Attest:

ED. M. MORRIS,

CHAS. L. WOLFGANG.