Q. J. HOKE.
CAR COUPLING.
No. 425,509. Patented Apr. 15, 1890.

Witnesses:
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THE WOOLY SISTERS CO., PHILADELPHIA, W. G.
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THE NOBLE VETERINE CO., ROCKFORD, ILLINOIS, WASHINGTON, D.C.
CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 425,509, dated April 15, 1890.
Application filed February 12, 1890. Serial No. 340,136. (No model.)

To all whom it may concern:

Be it known that I, QUINTON JEROME HOKE, a citizen of the United States, residing at Yorkville, in the county of York and State of South Carolina, have invented certain new and useful improvements in Car-Couplers; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification, and in which—

Figure 1 is a top plan view showing two couplers embodying my invention in the act of coupling on a straight track. Fig. 2 is a like view showing the couplers in the act of coupling a curve. Figs. 3 and 4 are views similar to Figs. 1 and 2, respectively, showing the couplers in engagement. Fig. 5 is a front elevation of one of the couplers, and Fig. 6 a side elevation showing the coupling-hook locked against rotation. Fig. 7 is an isometric view of the coupling-hook. Fig. 8 is a side elevation of the draw-head, the coupling-hook being removed; and Figs. 9 and 10 are horizontal sections of Figs. 3 and 4, respectively.

The invention relates to that class of couplers known as "hook-couplers," and has for its object to so construct the draw-head and hook as that two couplers will automatically couple either on a straight track or on a curve of any radius now considered practicable.

The invention has for its further object to provide means for uncoupling either from the side or from the top of a car; and also to so construct the couplers as to take the strain off the hook-pivot.

To these ends the invention consists in the construction of the draw-head and coupling-hook and in their co-operation, and in combination therewith of a locking device for the coupling-hook, as will now be fully described.

In the drawings, A indicates the draw-head, that is constructed with a straight jaw a, provided with perforated ears a' for the pivot-pin b of the coupling-hook B. The jaw a and ears a' are so constructed as to form a recess A' for the reception of the shank of the coupling-hook B, the front face of the wall of the recess being inclined in opposite directions, the outer or left inclined face a" forming a bearing for a corresponding bearing-face on said coupling-hook. In rear of the inclined bearing-face a" the depth of the recess A' is increased to form a locking-shoulder a", which engages the heel of the coupling-hook B.

At its rear end the draw-head is provided with a laterally-extending arm A², to which is fulcrumed a locking dog or hook A³, that 60 projects in a direction at right angles to the said arm or extension A², said locking dog or hook A³ being provided with a heel a" to hold the same in a substantially horizontal position, the front face a" of said dog being rounded for purposes presently explained. A" is the outwardly-curved jaw of the drawhead and serves to guide the hook of an adjacent coupler in coupling.

The coupling-hook B, pivoted to the ears of 70 the jaw a by means of the pivot-pin b has a hook portion B', perforated at b" for the reception of the usual link-pin to adapt the coupler for coupling with a link-coupler, the hook being recessed, as at b", for the reception of the link. The front face of the shank B' of the hook B has an inclined bearing-surface b", that seats upon or bears against the inclined bearing-face a" when the hook is in its normal position, and the said shank is provided with a heel b", that enters the deeper portion of the recess A', and is locked by the shoulder a", hereinbefore referred to. From the rear end of the shank B' projects an arm B², adapted to be engaged by the locking dog or hook A³ as the coupling-hook swings back into position for coupling, thus locking the hook against motion on its pivot.

By providing the draw-head with a locking-shoulder a" and the shank of the coupling-hook B with a heel b", that interlocks with the said shoulder, the strain is entirely removed from the pivot-pin b, whether such strain is in a straight line or at an angle to the longitudinal axis of the coupler. It will also be observed that when the hooks B are once coupled they cannot uncouple so long as there is a strain on the hooks to hold the heels b", thereof in engagement with their locking-shoulders a", whether the locking dogs or hooks A³ are in engagement with the arms B² of the coupling-hooks B or not.
Inasmuch as the entire front surface of the coupling-hooks B bears against a corresponding face in the draw-head, a breakage of the hook from shock or otherwise is almost impossible, thus forming a solid, simple, and efficient coupler. 

In uncoupling the locking dog or hook A\textsuperscript{1} may be lifted out of engagement with the arm B\textsuperscript{1} of the coupling-hook in any suitable manner. A cord or chain may, for instance, run over a suitable guide-pulley p on the platform-guard to the side of the car, or such a cord may be run to the top of a car, as shown in dotted lines in Fig. 5, so that the uncoupling may be effected either from the side or from the top of a car, according as the coupler is used on passenger or freight cars.

In uncoupling, when the locking-dog A\textsuperscript{1} is disengaged from the arm B\textsuperscript{1} of the coupling-hook B, a pull forward upon the arm B\textsuperscript{1} of said coupling-hook B will throw the hook portion B' inward between the lugs or ears a' of the draw-head to allow the hook on the adjacent car to pass freely out from between the jaws a and A\textsuperscript{1}, at the same time throwing the arm B\textsuperscript{1} forward out of reach of the locking dog or hook A\textsuperscript{1}, when disengaged from the said arm falls back into its normal approximately horizontal position.

In coupling the jaw A\textsuperscript{4} of the draw-head of the approaching coupler strikes the shank of the coupling-hook about at the point of junction of said shank and its arm B\textsuperscript{1}, which is a curvilinear surface, thereby forcing the hook portion B' outwardly and the arm B\textsuperscript{1} rearwardly, the said arm B\textsuperscript{1} striking the curved under face of the locking dog or hook A\textsuperscript{1}, lifting the same so as to engage and lock the arm and coupling-hook.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a hook-coupler, the combination, with the draw-head provided with a lateral extension and a locking dog or hook A\textsuperscript{4}, pivoted to said extension, of a coupling-hook pivoted in said draw-head and provided with a laterally-projecting arm adapted to be engaged and locked by said dog or hook A\textsuperscript{4}, substantially as and for the purposes specified.

2. In a hook-coupler, the combination, with the draw-head provided with a lateral extension and with a recess in one of its outer lateral faces adapted to form a locking-shoulder c\textsuperscript{1}, and a locking dog or hook A\textsuperscript{1}, pivoted to the extension of the draw-head, of a coupling-hook pivoted in said draw-head and having a shank provided with a heel b\textsuperscript{4}, adapted to engage the shoulder c\textsuperscript{1}, substantially as and for the purposes specified.

3. In a hook-coupler, the combination, with the draw-head provided with a recess in one of its outer lateral faces to form a locking-shoulder c\textsuperscript{1}, and with an extension projecting laterally from the rear end of said recessed portion, and a locking dog or hook pivoted to said draw-head so as to lie in substantially a horizontal plane at right angles to said extension, of a coupling-hook whose shank is provided with a heel adapted to engage the locking-shoulder c\textsuperscript{1} and with an arm B\textsuperscript{1}, substantially at right angles to the heel end of the hook-shank, adapted to be engaged by the locking dog or hook, substantially as and for the purposes specified.

4. In a hook-coupler, the combination, with a draw-head A, provided with the jaws a A\textsuperscript{1}, said jaw a having bearing lugs or ears a', the bearing-face c\textsuperscript{1}, locking-shoulder c\textsuperscript{1}, and lateral extension A\textsuperscript{4}, and the locking dog or hook A\textsuperscript{4}, pivoted to said extension, as described, of the coupling-hook B, pivoted between the lugs or ears a', the shank of said hook having the bearing-face b\textsuperscript{2}, heel b\textsuperscript{4}, and the laterally-projecting arm B\textsuperscript{1}, said parts being constructed and arranged for co-operation substantially as and for the purposes specified.

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

QUINTON JEROME HOKE.

Witnesses:
J. FRANK HART,
GEO. W. S. HART.