

(No Model.)

G. A. NORCROSS.
CAR COUPLING.

No. 501,688.

Patented July 18, 1893.

Fig. 1.

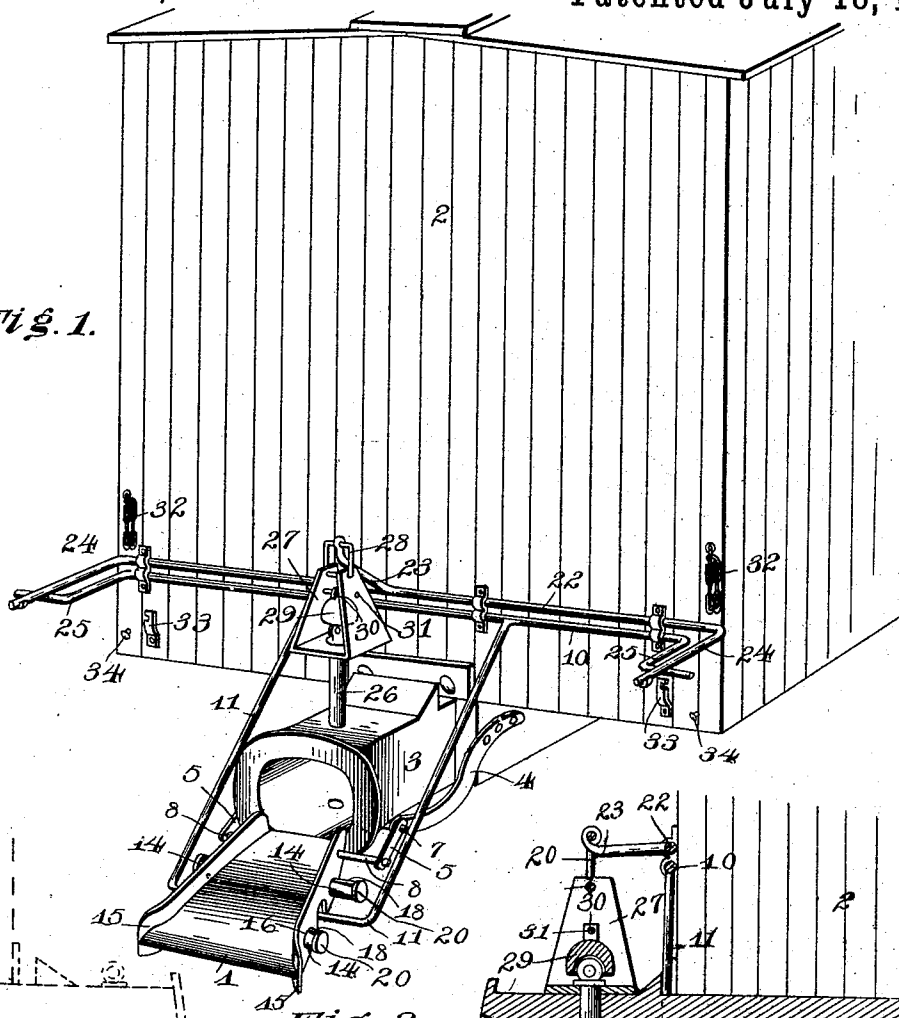


Fig. 2.

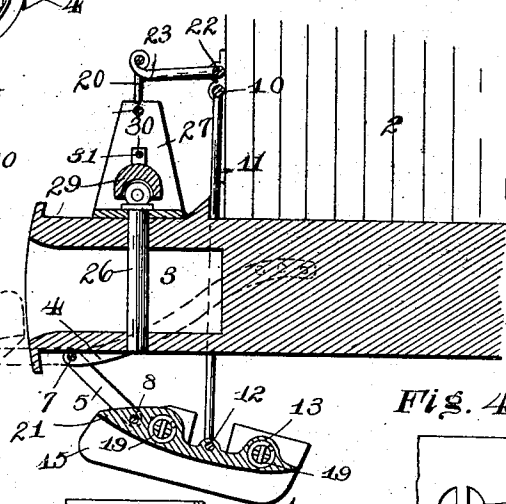


Fig. 4.

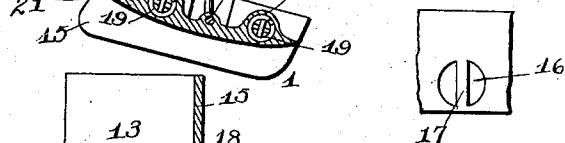
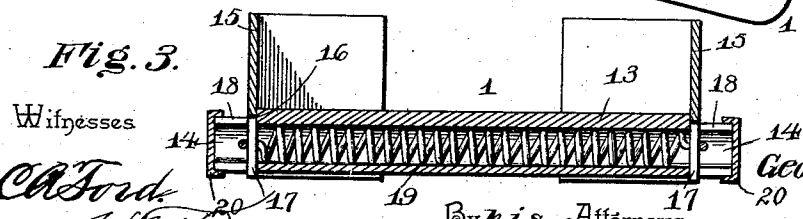


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE A. NORCROSS, OF SAN ANTONIO, TEXAS, ASSIGNOR OF ONE-HALF
TO HENRY E. VERNOR, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 501,688, dated July 18, 1893.

Application filed February 4, 1893. Serial No. 460,949. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. NORCROSS, a citizen of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented a new and useful Car-Coupling, of which the following is a specification.

The invention relates to improvements in car couplings.

10 The object of the present invention is to improve the construction of car couplings, to enable cars to be readily coupled and uncoupled without going between them, and to facilitate the coupling of cars having draw-heads at the same and different heights by
15 readily guiding the link of one of them into the other.

The invention consists in the construction and novel combination and arrangement of
20 parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims hereto appended.

In the drawings—Figure 1 is a perspective view of a car coupling constructed in accordance with this invention, the link guider being in operative position. Fig. 2 is a longitudinal sectional view of the same, the link-guider being returned beneath the draw-head, and illustrating in dotted lines the link-guider
30 extended and guiding a link. Fig. 3 is a transverse sectional view of the same. Fig. 4 is a detail view of a portion of one of the sides of the link-guider.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a link guider which is hingedly connected with a car 2 and adapted to be swung outward in advance of the draw-head
40 3 to form an outward and downward inclined chute to receive the link of an approaching car to guide the same into the draw-head 3, thereby enabling the cars having draw-heads at the same and different elevation to be readily coupled without necessitating going
45 between cars and guiding the link by hand. The link guider, which may be connected in any manner with the car, is preferably suspended from the car by forwardly extending
50 arms 4 and links 5; the arms are sigmoidally curved and extend below the draw-head; and

the links are hingedly connected to the arms 4 and the link guider 1 by rods 7 and 8, which are transversely disposed. The rod 8 is arranged in a bore of the link guider. The
55 outward and return swing of the link guider is effected by a rock-shaft 10 journaled transversely of the car and arranged above the draw-head and provided with a central depending crank bend 11, which forms an arm
60 and extends downward at each side of the draw-head and is connected hingedly to an eye 12 located on the inner face of and near the center of the body of the link guider. When the rock-shaft 10 is turned the link
65 guider is moved outward with a curved movement and is advanced to an inclined position in front of the draw-head as illustrated in Fig. 1 of the accompanying drawings; and when the rock-shaft is partially rotated in the
70 opposite direction the link guider is returned to a position beneath the draw-head as illustrated in Fig. 2 of the accompanying drawings. When in an inclined position the link
75 guider is adapted to receive a link at an elevation below or at either side of the draw-head 3 and guide the link upward and direct the same into the draw-head 3.

The link guider consists of a body having a smooth outer face and provided on its inner
80 face with transversely disposed tubular portions 13, preferably formed integral with the body and having slotted lateral extensions 14, on which are mounted yielding sides 15. The yielding sides 15 of the link guider have out-
85 wardly bent lower ends and are provided with opposite semi-circular openings 16 to receive the slotted lateral extensions of the tubular portion, and forming an integral fastening cross-piece 17 arranged in the slots 18 of the
90 lateral extensions 14, and having attached to them the ends of spiral springs 19 housed in the tubular portions. The cross-pieces 17 are retained in the slots 19 by caps 20 screwing on the ends of the lateral extensions. The
95 spiral springs afford a yielding or elastic connection between the sides 15 of the link guider in order, when cars come together for coupling, to permit the draw-head of one car to approach and come in contact with the draw-
100 head of the other car without damaging or in anywise injuring the link guider. A draw-

head striking the link-guider would separate the yielding sides, but the sides 15, which converge toward the upper end of the link-guider would not yield to a link, and the latter would be guided upward to the draw-head. 5 The body of the link-guider tapers toward the upper end in width and also tapers in thickness at its upper end to make it wedge-shaped; and the lower and wider end is beveled to 10 avoid a shoulder. It will be noticed that the links 5 cause the link-guider to move in a curved path and any pressure on the front of the link-guider, when the latter is in operative position, would tend to first cause the 15 link-guider to assume a vertical position with the upper end thereof supporting the link, and then increased pressure caused by further approach of draw-heads will return the same and force the link-guider downward instead 20 of crushing it between the two draw-heads. This operation is assisted by the wedge-shaped upper end 21 of the body, which on being clamped would force itself downward.

The coupling pin is simultaneously raised 25 with the outward movement or swinging of the link-guider by a rock-shaft 22 journaled transversely of the car and provided with a central arm 23 connected with the coupling pin 26. The ends of the rock-shaft 22 terminate in handles 24 which cross and are arranged above handles 25 of the rock-shaft 10. 30 The handles 24 of the rock-shaft 22 being arranged above those of the rock-shaft 10 may be moved independently of the handles 25 to lift the link for uncoupling without operating the link-guider; but, by raising the handle 25 the handle 24 is also carried upward, thereby 35 simultaneously raising the coupling pin and swinging the link guider outward.

The upper end of the coupling pin 26 is arranged with a casing 27, consisting of a bottom and upwardly converging sides and connected at the top by a link 28 with the outer end of the arm 23 of the rock-shaft 22. 40 The casing has suspended within it an inverted cup 29, which when the coupling pin is lowered bears down upon the upper end of the same and enables the coupling pin to be shaken by the rock-shaft 22, in the same manner in which a coupling pin is shaken by hand 45 in coupling to direct it into the coupling pin perforation at the bottom of the draw-head. By this construction the same control of the coupling pin is obtained at the side of a car as is had in coupling by hand between cars. 50 The inverted cup is provided at its top with an eye 30 and is suspended in the casing by means of a horizontal pin or bolt 31.

The coupling pin may be held uncoupled 60 for various purposes by a chain 32 arranged at each side of the car and having one end secured thereto and its other end provided with a hook and adapted to be passed around the handle 24 to hold the same elevated.

65 The link-guider may be retained securely beneath the draw-head, as illustrated in Fig. 2 of the accompanying drawings, and the

coupling pin may be held in positive engagement with the link, without liability of being accidentally thrown out of such engagement, 70 by a latch 33, arranged at each side of the car and pivoted at one end and provided at the other end with a notch, adapted to engage a headed projection 34 of the car.

It will be apparent that the means for guiding a link into a draw-head and for raising 75 and lowering a coupling pin are simple, inexpensive and effective, and that they do not necessitate going between cars in the coupling and uncoupling. 80

Any suitable means may be provided to enable the mechanism to be operated from the top of a car.

Changes in the form, proportion and the minor details of construction may be resorted 85 to without departing from the principle, or sacrificing any of the advantages of this invention.

What I claim is—

1. In a car coupling, the combination of a 90 car having a draw-head, a link-guider located beneath the draw-head at the front thereof, and links hingedly connecting the upper end of the link-guider with the front portion of the draw-head and pivoted at each of their 95 ends, and means for swinging the link-guider outward to an inclined position in advance of the draw-head, substantially as described.

2. In a car coupling, the combination with a car having a draw-head, of links having 100 their upper ends hingedly connected with the car, at the front end of the draw-head a link-guider located beneath the draw-head and hinged at its upper end to the lower ends of said links and adapted to be swung outward 105 to an inclined position in advance of the draw-head, and a rock-shaft journaled on the car and having an arm connected with the link-guider to swing the latter outward and to return the same beneath the draw-head, 110 substantially as described.

3. In a car coupling, the combination with a car having a draw-head, of a link-guider arranged beneath the draw-head and hingedly 115 connected with the car and provided with yielding sides adapted to be forced outward, and means for swinging the link-guider outward to an inclined position in advance of the draw-head and for returning the same beneath 120 the draw-head, substantially as described.

4. In a car coupling, the combination with a car having a draw-head, of a link-guider arranged beneath the draw-head and hingedly 125 connected with the car and provided with converging yielding sides adapted to be forced outward, and means for swinging the link-guider outward to an inclined position in advance of the draw-head and for returning the same beneath the draw-head, substantially as 130 described.

5. In a car coupling, the combination with a car having a draw-head, of a link-guider comprising a body provided on its inner face with tubular portions having slotted lateral

extensions, sides having openings receiving the lateral extensions and provided with cross-pieces arranged in the slots of the extensions, and springs arranged in the tubular portions and attached to said cross-pieces, and means for swinging the link-guider outward to an inclined position in advance of the draw-head and for returning the same beneath the draw-head, substantially as described.

6. In a car coupling, the combination with a car having a draw-head, of a link-guider comprising a body provided with lateral extensions, sides mounted on the extensions, and springs connecting the sides, and means for swinging the link-guider outward to an inclined position in advance of the draw-head at the same time raising the coupling pin and for returning the same beneath the draw-head dropping the coupling pin in its draw-head, substantially as described.

7. In a car coupling, the combination with a car having a draw-head, of a link-guider comprising a body, yielding sides adapted to be forced outward, and springs connecting the sides, and means for swinging the link-guider outward to an inclined position in advance of the draw-head and for returning the same beneath the draw-head, substantially as described.

8. In a car coupling, the combination with a car having a draw-head, of a link-guider hingedly connected with the car and arranged below the draw-head and adapted to be swung outward in advance of the draw-head, a rock-shaft journaled on the car and having an arm connected to the link-guider, said rock-shaft being provided at its ends with handles, a coupling pin, and a rock-shaft journaled on the car and arranged above the first mentioned rock-shaft and provided with a central arm connected to the coupling pin and at its ends with handles arranged for movement independent of the handles of the first mentioned rock-shaft and arranged to be engaged by the handles of the first mentioned rock-shaft, substantially as and for the purpose set forth.

9. In a car coupling, the combination with a car having a draw-head, of a link-guider hingedly connected with the car and arranged below the draw-head and adapted to be swung outward in advance of the draw-head, a rock-shaft journaled on the car and having an arm connected to the link-guider, said rock-shaft being provided at its ends with handles, a coupling pin, a rock-shaft journaled on the car and arranged above the first mentioned rock-shaft and provided with a central arm connected to the coupling pin and at its ends with handles arranged for movement independent of the handles of the first mentioned rock-shaft and arranged to be engaged by the handles of the first mentioned rock-shaft, a chain arranged above the rock-shafts for holding the coupling pin elevated, and a latch arranged below the rock-shafts and adapted to engage the last mentioned one to hold the link guider beneath the draw-head and to prevent the coupling pin from rising, substantially as described.

10. In a car coupling, the combination with a car having a draw-head, of a coupling pin, a casing receiving the upper end of the coupling pin, an inverted cup suspended within the casing and a rock-shaft mounted on the car and having an arm connected with the top of the casing, substantially as described.

11. In a car coupling, the combination with a car having a draw-head, of a coupling pin, a casing having tapering sides receiving the upper end of the coupling pin, an inverted cup suspended within the casing and engaging the upper end of the coupling pin, a rock-shaft having an arm, and a link connected to the upper end of the casing and to the arm of the rock-shaft, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE A. NORCROSS.

Witnesses:

J. H. SIGGERS,
N. G. SCHAAFF.