

(No Model.)

J. F. TINER.  
CAR COUPLING.

No. 545,751.

Patented Sept. 3, 1895.

Fig. 1.

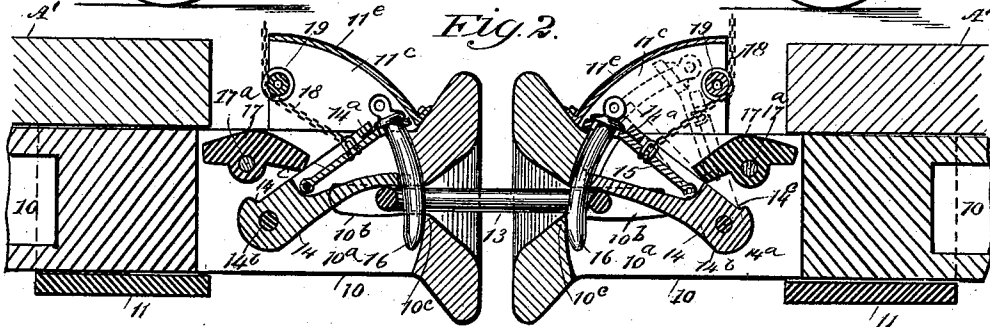
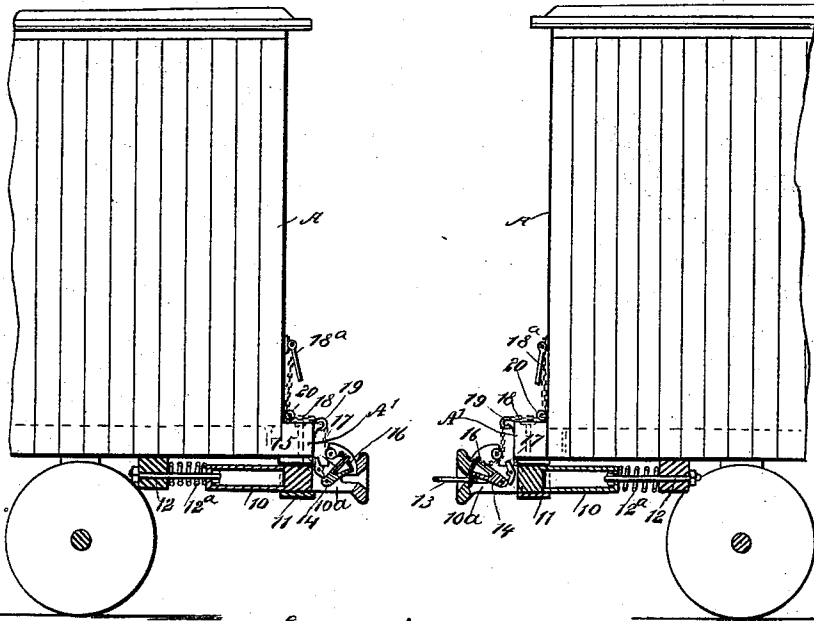
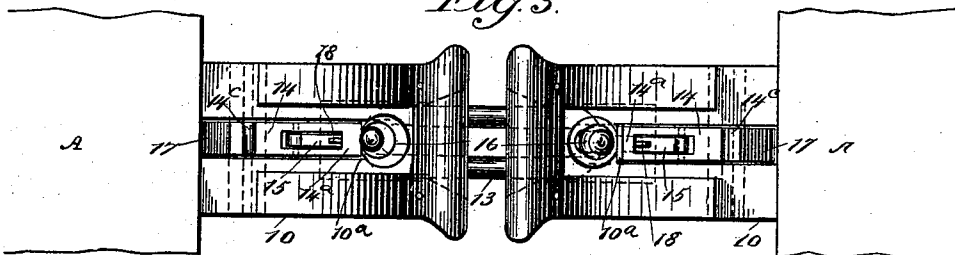


Fig. 3.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN F. TINER, OF SUTHERLAND SPRINGS, TEXAS, ASSIGNOR OF THREE-FOURTHS TO BLANCHE J. TINER, OF SAME PLACE, AND WILSON McNEILL AND ELLA J. NEWTON, OF AUSTIN, TEXAS.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 545,751, dated September 3, 1895.

Application filed May 13, 1895. Serial No. 549,161. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN F. TINER, of Sutherland Springs, in the county of Wilson and State of Texas, have invented a new and Improved Car-Coupling, of which the following is a full, clear, and exact description.

This invention relates to an improved car-coupling of the link-and-drop-pin type, and has for its object to provide a simple and reliable car-coupling of the indicated type, which will embody novel features of construction that adapt said coupling for an automatic coupled engagement with a similar coupling, and that may be safely uncoupled from the side of the car whereon the improvement is secured.

The invention consists in the construction and combination of parts, as hereinafter described, and indicated in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional side view of two of the improved couplings on approaching cars shown in part, one coupling supporting a link for coupled engagement with the mating coupling. Fig. 2 is an enlarged sectional side view of a pair of the improved car-couplings in coupled connection, rear portions of the same being removed; and Fig. 3 is a plan view of forward portions of two car-couplings embodying the features of improvement and shown in coupled connection effected by a common elongated coupling-link.

The draw-head 10 is constructed of cast or wrought metal, and comprises an elongated body which may be supported in any preferred manner on the car-frame. As shown, the draw-head is connected with the car A by a common looped band 11, which loosely retains the draw-head in position free to receive longitudinal movement. The draw-head is also connected in the usual manner with the frame of the car at its rear end by a draw-bar 12, on which a spring 12<sup>a</sup> may be mounted, which is introduced between the rear end of the draw-head and a cross-timber on the car to which the draw-bar is loosely secured, as shown

in Fig. 1, the spring serving to cushion the end-thrust of the draw-head in service, and return it to normal position when said draw-head is forced rearward from any cause. A longitudinal slot is produced in the forward portion of the draw-head 10, extending vertically through the same from a point suitably removed from the front face of the draw-head, and said slot 10<sup>a</sup> is proportioned in length, so as to afford ample room for the introduction of working parts, which will presently be described. At the front end the draw-head is laterally enlarged to produce a heavy rib around its body, and from the front end a horizontal slot 10<sup>b</sup> is rearwardly extended, crossing the vertical slot and ending before reaching the rear wall of said vertical slot, as clearly indicated in Fig. 2. The horizontal slot 10<sup>b</sup> is of a suitable width and height to permit the insertion therein of an ordinary elongated coupling-link 13, which has sufficient length to adapt it for properly entering two draw-heads having the improvements to be coupled thereto and permit space to intervene the ends of the draw-heads for necessary play of the link when cars coupled with the improved couplings are running a curve of the railroad. In order to facilitate the introduction and permit free play vertically and laterally, there is a flaring throat formed at the front end of the draw-head 10, which throat converges so as to intersect the horizontal slot that in effect is a prolongation of the flared throat.

For effective action of the parts it is preferred to construct the horizontal slot 10<sup>b</sup> of such a height that will permit the insertion of the link 13 without any considerable looseness of the latter between the top and bottom walls of said slots, as clearly shown in Fig. 2; and, furthermore, the vertical slot 10<sup>a</sup> has its front terminal walls made concave to permit the free movement of other parts, which will presently be described.

In the vertical slot of the draw-head a heavy gravity-block 14 is loosely inserted and pivoted, as represented in Fig. 2, said block being formed with an open recess on its upper side which extends rearwardly of a correct length and has a proper depth to re-

ceive the lifting-plate 15 that is pivoted in the recess of the gravity-block at the rear end of the plate and recess of the block, so that the front end of the plate, which is vertically perforated or furnished with a ring, will be adapted to receive and loosely support the curved and headed coupling-pin 16 in said perforation or ring. The lifting-plate 15 is prevented from passing out of the recess in the gravity-block at the front end of the latter by a cross-bar 14<sup>a</sup> that is formed or secured on the upper edges of side walls produced on the block by its recess, so that if the plate is lifted until it contacts with the cross-bar a further lifting movement of the plate will also raise the gravity-block. The length of the gravity block 14 is so proportioned that its rear end may be pivoted by a transverse bolt 14<sup>b</sup> near the rear wall of the vertical slot occupied by the block, and the curved pin 16 work in the vertical slot near its front cross-wall, as represented in Fig. 2.

As shown in Fig. 2, the gravity-block 14 is prevented from falling too far by an impinge of the front end of the plate 15 on the front shoulder of the slot 10<sup>a</sup>, and it will be seen that the pin 16 works near the concave face of said slot at its front end and also loosely engages an increased notch that is produced to receive said pin on the front lower portion of the gravity-block.

From the construction of parts as described, the gravity-block 14 will be made to bear on the link 13, which rests on the narrow cross-wall 10<sup>c</sup>, produced by the near approach of the front of the vertical slot 10<sup>a</sup> to the rear end of the flared throat of the draw-head, and the weight of the gravity-block should be sufficient to slightly elevate the free outer end of the link 13 when the latter is inserted in the draw-head and is about to enter a mating draw-head. A rocking dog 17 is pivoted in the vertical slot of the draw-head above the gravity-block and near the rear pivoted end of said block, the dog having a heavy portion of its body projecting rearward of the pivot-bolt 17<sup>a</sup> therefor, and preferably the rear side of the dog is rendered convex in direction of its length, said convex side being located near to the rear transverse wall of the vertical slot wherein the dog and block are located, and the upper end of the dog is adapted to strike the adjacent cross-beam A' of the car when rearwardly moved.

On the upper side of the gravity-block 14 a slight projection is formed, as indicated at 14<sup>c</sup>, and the length of the limb of the dog 17 that projects below the pivot-bolt 17<sup>a</sup> is so gaged that its free lower end may rest against the shoulder produced on the upper side of the gravity-block by the projection 14<sup>c</sup>, the weight of the rear portion of the dog projecting said end forwardly. This engagement of parts is permitted if the gravity-block is raised at the front end so as to rock the coupling-pin 16 out of the horizontal slot of the draw-head, and

therefore out of engagement with the link 13 that may have been entered in said slot and locked to the draw-head by the curved pin, this relative position of the dog and gravity-block being shown on the coupling at the left hand side in Fig. 1.

The preferred means for lifting the coupling-pin 16 in a safe manner from the side of the car whereon the coupling is secured consists of a chain or other flexible connection 18, that is attached at one end to a ring or staple on the lifting-plate 15, and thence extends to a loose pulley 19, which is pivoted between two parallel vertical flanges 11<sup>c</sup>, that are formed or secured on top of the draw-head each side of the longitudinal and vertical slot occupied by the gravity-block, lifting-plate, and dog 17. The pin 16 may have a ring on its head and be lifted independently of the plate 15, if desired, or be completely removed therefrom. From the pulley 19 the chain 18 is extended to another loose pulley 20, that is held to rotate on the end of the car, and thence the chain is laterally projected toward a staple or other support on the car to permit the handle or ring 18<sup>a</sup> of the chain to be readily reached by an operator on the ground at the side of the car, who can, by pulling on the chain, lift the plate 15 and pin 16 in an obvious manner. It is preferred to curve the upper edges of the parallel upright flanges 11<sup>c</sup> and cover said edges with a closely fitted and secured cap-plate 11<sup>e</sup>, which will cover the parts below said cap-plate and thus prevent entrance of snow and dirt within the vertical slot, except at its rear end, which may also be covered by the cap-plate if a perforation is made in it to permit the free upward extension of the chain 18.

It will be seen that the construction of parts provided in the improved car-coupling affords a simple, strong, and very convenient coupling that will reliably connect two cars having the improvement, this operation being effected by first introducing one end of the link 13 into the horizontal slot 11<sup>b</sup>, and lowering the coupling-pin 16 through the looped end of the link, the block 14 that has been raised with the plate 15 then resting on the inserted link end, so as to maintain said link projected in a nearly level condition, with its other end free to enter an approaching draw-head on another car.

The coupling that is to be entered by the link has its pin held in elevated adjustment by the dog 17, as shown at the left-hand side in Fig. 1, and when the two draw-heads 11 are caused to impinge at their front ends the rearward movement of the draw-head at the left will press the upper limb of the dog 17 against the front edge of the car-timber A' toward which the draw-head slides, and this will rock the lower limb of the dog off of the gravity-block 14, allowing the latter to fall and enter the coupling-pin within the looped end of the link that has sufficiently entered

the draw-head to permit such an engagement of the link and pin.

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

1. In a car coupling, the combination with a vertically slotted drawhead, of a pivoted gravity block in said slot, a lifting plate loosely secured on the block, a curved pin on the front of the plate, means to lift the pin and plate, and an elongated link insertible in a horizontal slot of the drawhead which extends from the front end of said drawhead and intersects the vertical slot therein, substantially as described.

2. In a car coupling, the combination with a slidable, forwardly spring-pressed drawhead having a vertical slot longitudinally extending from near its front end and also horizontally slotted from the front to intersect the vertical slot, of a recessed gravity block pivoted near its rear end in the vertical slot, a lifting plate pivoted in the recess of the block near its rear end, and prevented from leaving said recess at the front by a cross bar, a headed curved coupling pin loosely engaging the front end of the lifting plate and lifted thereby, a locking dog pivoted in the vertical slot behind a shoulder on the upper side of said block and interlocking its lower end with said shoulder when the block is upwardly rocked, and means to lift the plate, pin and

block from the side of the car, substantially as described.

3. In a car coupling, the combination with a slidably supported and spring-pressed drawhead, having a vertical and a horizontal slot formed longitudinally therein, the vertical slot extending from behind a ribbed enlargement at the front, the horizontal seat being flared at the front end, of a recessed gravity block pivoted at its rear end in the vertical slot, and having a locking shoulder on its upper side near the rear end behind the pivot of the block, a lifting plate pivoted near its rear end in the recess of the gravity block, a curved and headed coupling pin engaging a perforation at the front of the lifting plate and lifted thereby, a locking dog pivoted in the vertical slot near its rear wall, said dog having a heavy portion behind its pivot adapted to project its lower end or toe forward to interlock with the shoulder on the block when said block is forwardly raised, a coupling link adapted to enter the horizontal slot and be supported by the weight of the gravity block, and a chain extended from the lifting plate to the side of the car for lifting the block, pin and plate, substantially as described.

JOHN F. TINER.

Witnesses:

JESSE COPE,  
LANE TINER.