(No Model.)

# E. N. & J. J. BYERS.

## CAR COUPLING.

No. 525,734. Patented Sept. 11, 1894.

*Fig. 1.*

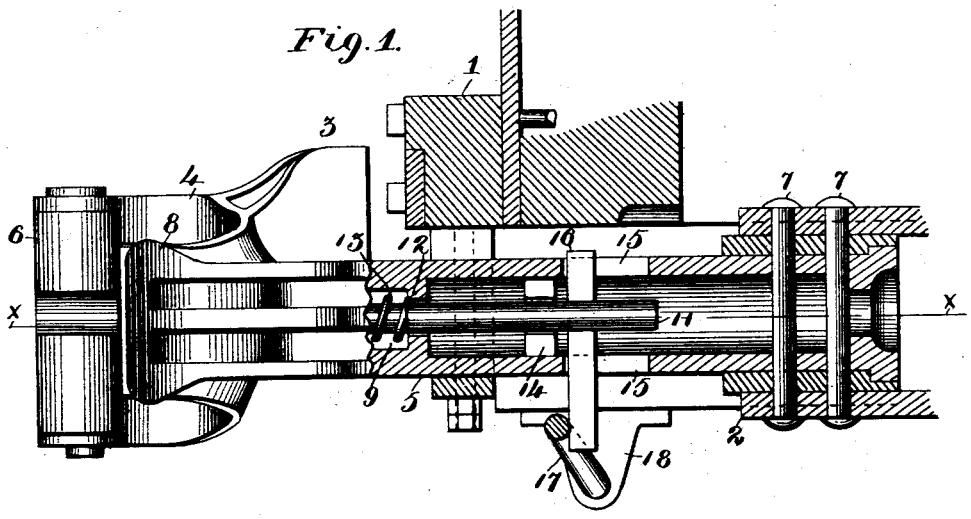
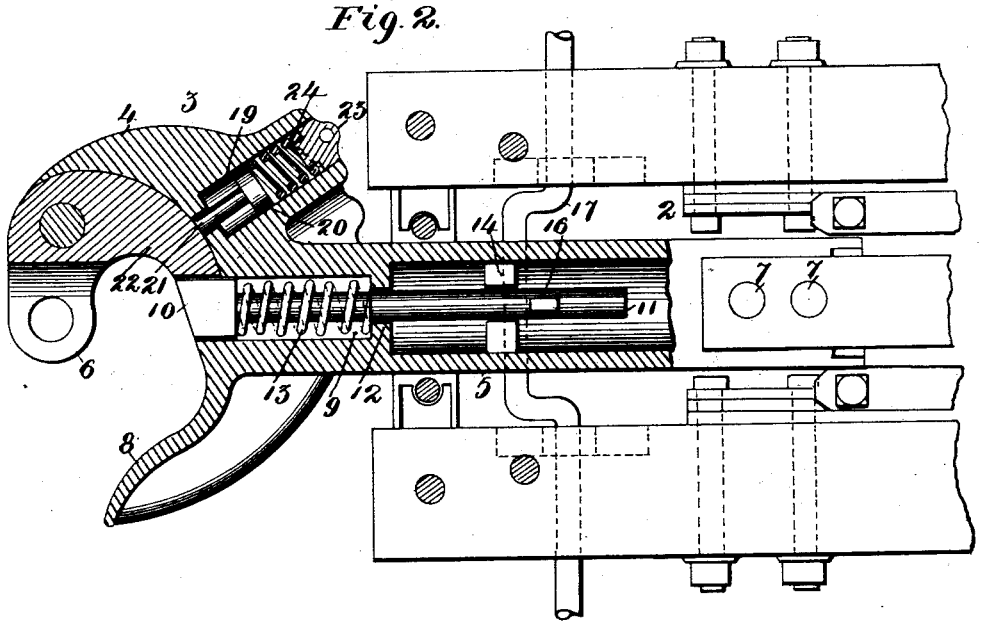



*Fig. 2.*

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# UNITED STATES PATENT OFFICE.

EDWARD N. BYERS AND JACOB J. BYERS, OF CAMERON, MISSOURI, ASSIGNORS OF ONE-THIRD TO THOMAS HUSER, OF SAME PLACE.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 525,734, dated September 11, 1894.

Application filed October 9, 1893. Serial No. 487,617. (No model.)

*To all whom it may concern:*

Be it known that we, EDWARD N. BYERS and JACOB J. BYERS, of Cameron, Clinton county, State of Missouri, have jointly invented certain new and useful Improvements in Car-Couplers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention has relation to improvements in car couplers and consists in the novel arrangement and combination of parts more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a combined side elevation and section of the coupler as attached to the draft timbers of the car; and Fig. 2 is a transverse horizontal section taken on the line *x*—*x* of Fig. 1.

The object of our invention is to construct a coupler that will operate automatically under all conditions, particularly should the drawhead become severed from the stem of the drawbar, or the drawbar become disconnected from the draft timbers in either instance the knuckle being released automatically as hereinafter more fully described. It also consists in details to be pointed out in the description.

Referring to the drawings, 1 represents one end of the car, and 2 the draft timbers secured to the bottom of the same, all of which are of well known construction.

3 represents the drawbar of the Janney type having the head 4, stem 5 and knuckle 6. The rear end of the stem of the drawbar is attached to the draft timbers 2 by bolts 7 in the usual way. The drawbar 3 is provided with a guard arm 8, and located opposite the same and secured to the drawhead is the pivoted knuckle 6.

Formed in the drawhead 4 is a throat 9 within which moves longitudinally a head 10 secured to the forward end of a rod 11 which parts form the locking device for the knuckle. Interposed between the head 10 and a wall 12 forming the termination of the throat 9, and encircling the rod 11 is a coiled spring 13 which operates to hold the head 10 in the position as shown in Fig. 2, or in a position for locking the pivoted knuckle. The rod 11 forming a part of the locking device moves loosely through the wall 12 forming a part of the drawbar and extends a suitable distance rearward within the stem 5, it also passing loosely through a spider 14 formed integrally with the stem 5 for supporting and guiding the said locking device.

Formed in the stem 5 of the drawbar immediately above and below the rod 11 are two slots 15 within which moves a pin or key 16 which is passed through the rear end of the rod 11, the lower end of which key extends a suitable distance below the drawbar and cooperates with the crank shaft 17 in a manner as best shown in Fig. 1 for releasing the locking device. The said crank shaft 17 is secured to the draft timbers 2 by bearings 18, and to one or both ends of the same may be secured a lever or other equivalent device for operating the said shaft from the side of the car or top of the same as found most convenient.

Formed in the head 4 of the drawbar is a cavity 19 within which moves loosely the head 20 fixed to a pin 21 which pin passes through the metal of the drawhead and the end of which is in contact with the rear curved surface of the tail end of the knuckle 22, when the knuckle is in a closed position. The cavity 19 is closed by a cap 23 which may be secured to the drawhead in any mechanical manner and located within said cavity, and interposed between said cap and head 20 of the pin 21 is a coiled spring 24 for opening the knuckle when the same is released from its locked position.

When it is desired to release the knuckle from its locked position, the crank shaft 17 is turned in the direction as shown by the arrow in Fig. 1 and the same brought in contact with the lower end of the key 16, and by a further movement of said shaft the locking device is forced back compressing the spring 13 and moving the head farther within the throat 9 of the drawhead and out of contact with the tail end of the knuckle. After this operation has been performed the knuckle 6 will be opened automatically by the pressure of the pin 21 upon the tail end of the same which will be clearly understood from the foregoing description. Should the drawbar

become disconnected from the draft timbers owing to breakage of the stem or bolts securing the same, the lower end of the key 16 will come in contact with the rear surface of the supporting strap 25 secured to the draft rigging or car in which instance further draft upon the coupler will cause the spring 13 to become compressed and the head 10 of the locking device will be moved rearward within the throat 9 of the drawhead sufficiently to release the knuckle 6 separating the cars and thus preventing the drawbar from being entirely pulled out of the draft rigging and falling upon the track which generally causes derailment of cars.

It is further to be noted by the construction herein shown and described that should the drawhead become broken or severed from the stem of the drawbar, a like result would follow, the knuckle being released as in the former instance.

Having described our invention, what we claim is—

A car coupler comprising a drawhead and knuckle, a locking device for the same, a cavity formed in the drawhead, a cap secured to said drawbar and covering said cavity, a pin movably located within said cavity the end of which is in contact with the tail end of the knuckle when the same is closed, and a spring interposed between said cap and pin for operating the pin in one direction and opening the knuckle when released, substantially as set forth.

In testimony whereof we affix our signatures in the presence of two witnesses.

EDWARD N. BYERS.
JACOB J. BYERS.

Witnesses:
C. H. HAMMOND,
PHILIP QUIGLEY.