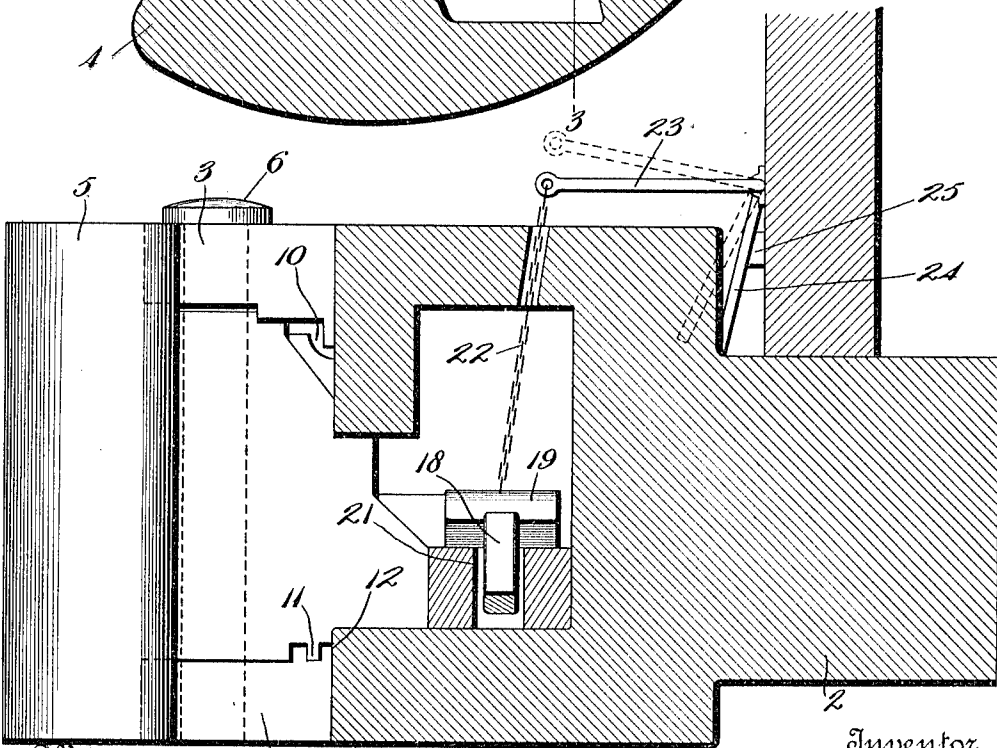
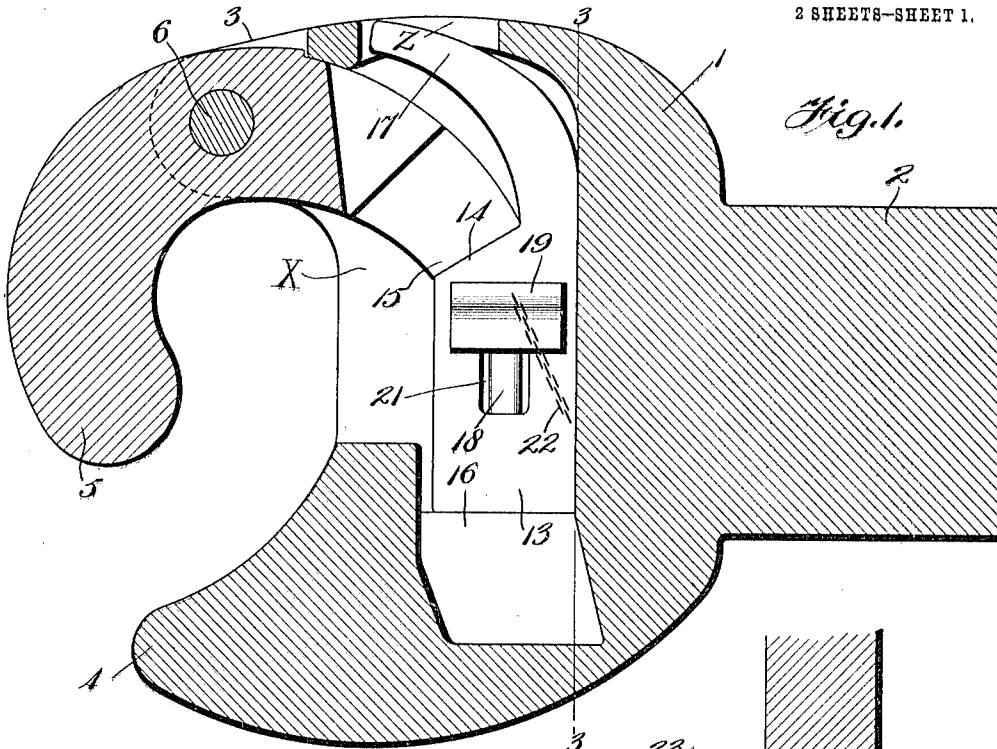


E. L. NORRIS.
CAR COUPLING.
APPLICATION FILED JULY 17, 1912.

1,063,935.

Patented June 3, 1913.

2 SHEETS-SHEET 1.



Witnesses
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Fig. 2.

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Fig. 3.

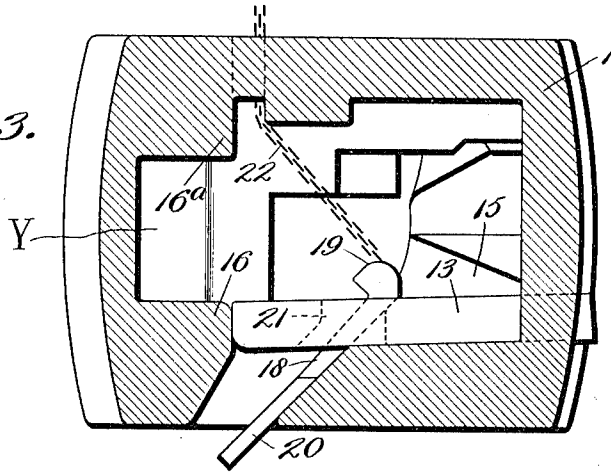


Fig. 4.

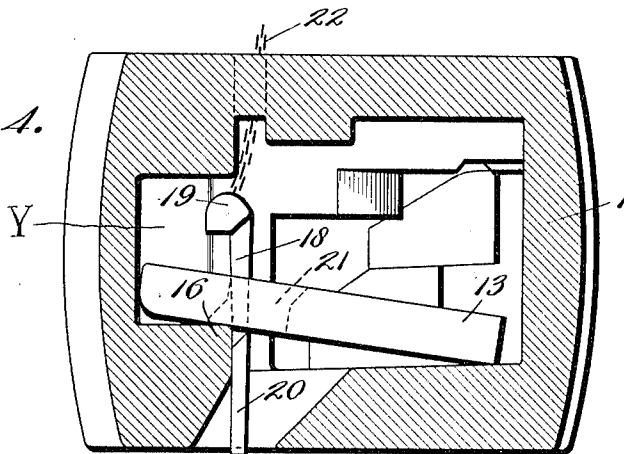
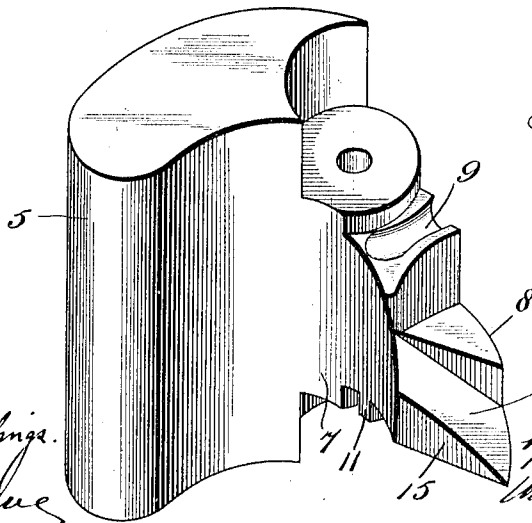


Fig. 5.



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UNITED STATES PATENT OFFICE.

EDWARD LEASON NORRIS, OF GEORGIANA, ALABAMA.

CAR-COUPLING.

1,063,935.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed July 17, 1912. Serial No. 709,938.

To all whom it may concern:

Be it known that I, EDWARD LEASON NORRIS, a citizen of the United States, residing at Georgiana, in the county of Butler and State of Alabama, 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, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to car couplers, and has for its purpose to provide a construction having few parts, which will effectively cooperate to relieve the pivot pin of the knuckle of all strain, and wherein the coupling will securely hold in the possible event of displacement of said pin.

The invention further contemplates a coupling of the automatic type having a novel form of locking means for the knuckle, which is manually controllable to effect the unlocking and opening of the knuckle; and which may be set to permit of freedom of movement of said knuckle.

With these and other objects in view the invention consists in the novel details of construction and combinations of parts more fully hereinafter disclosed and particularly pointed out in the claims.

Referring to the accompanying drawings forming a part of this specification in which like numerals designate like parts in all the views:—Figure 1 is a top plan view of the coupling in section, and showing the locking mechanism thereof in elevation; Fig. 2 is a longitudinal sectional view of the coupling, with parts in elevation; Fig. 3 is a transverse sectional view on a reduced scale, taken on the line 3—3 of Fig. 1, and looking in the direction of the arrows; Fig. 4 is a similar view showing the locking device in released position; and Fig. 5 is a detail perspective view of the knuckle.

Referring to the construction in detail, 1 designates the draw-head formed integral with the draw-bar 2, and having a pair of jaws 3 and a guard arm 4. The knuckle 5 is pivotally mounted between the jaws 3 on a bolt, or pivot pin, 6. Said knuckle 5 is constructed with a shank portion 7 terminating in a tail piece 8, as clearly shown in Fig. 5.

To the end that the knuckle will securely hold in position, in the possible event of displacement of the pivot pin 6, the tail piece 8 of said knuckle is formed with a groove, or recess, 9 adapted to engage with a similarly designed rib or projection 10, formed on the upper jaw 3; and a rib or projection 11 formed on the underside of the tail piece 8 engages in a groove or recess 12 formed on the lower jaw 3, as illustrated in Fig. 2. In providing the coupling with the interlocking elements just described, it will be readily seen that the knuckle 5 will be prevented from being displaced at its pivotal point in the possible event of loss of the pivot pin 6.

The locking device for the knuckle consists of a bolt 13, that is mounted to have substantial freedom of movement in a lateral and vertical direction within the recess chamber X formed in the draw-head 1. Said bolt is constructed with a shoulder 14, which abuts against the end 15 of the tail piece 8 and holds the knuckle in locked position by reason of having engagement with a shoulder 16 formed on the inner side of the draw-head. Said bolt 13 is further provided with a curved tongue 17, whose function is to engage with the curved surface of the tail piece 8, and cause the knuckle 5 to be turned on its pivot to open position when the bolt 13 is moved laterally, *i. e.*, from the position shown in Fig. 3 to that position shown in Fig. 4. The recess X is constructed with a pocket Y, which provides the necessary space for receiving the bolt 13 when the same is shifted in the manner just stated.

The bolt 13 is provided with a key 18, which is constructed with a head 19 on its upper end, an enlarged portion 20 on its lower end, and the portion between said head and enlarged portion being reduced and passing through an elongated slot 21 formed in the bolt 13. Said slot 21 has portions of its opposite ends beveled, so that the key 18 will rest thereon in that position shown in Fig. 3, and in order that the bolt may be readily engaged for lifting by the enlarged portion 20 when the key is raised by the manually actuated chain 22.

The bolt 13 and key 18 are adapted to be readily disassembled, in the possible event

of breakage of either of the parts, since the enlarged end 20 of the key 18 may be readily inserted through the slot 21 by being turned edgewise, or in alinement with said slot, as will be understood; and to effect the removal of the locking device from the chamber or recess of the draw-head, said draw-head has one wall thereof provided with an opening Z through which the parts may be passed.

The means for manually actuating the locking device consists of the lifting bar 23 having one end thereof attached to the chain 22, and which is provided with a handle or arm 24. A block 25 having a beveled face provides a supporting member for holding the bar 23 in a partly raised position for a purpose to be presently stated.

The manner of operation of the coupling when in use is as follows:—The raising of the lifting bar 23 will cause the bolt 13 to be moved by the key 18 from the position shown in Fig. 3 to that shown in Fig. 4, and said movement of the bolt will cause the surfaces 14 and 15 of the bolt and tail piece to become disengaged, thus unlocking the knuckle, and said movement also will cause the knuckle to be turned on its pivot to open position by reason of the tongue 17 engaging with the curved surface of the tail piece 8, as before stated. If cars are desired to be brought together, but not coupled, it is necessary only to partially lift the bolt 13, where its position may be secure by reason of the lever 24 resting on the support 25, when the abutting surface 14 of the bolt will be raised clear of the end 15 of the tail piece and consequently allow the knuckle 15 to be turned freely on its pivot. As soon as the lever 24 is disengaged from the support 25, the chain 22 is thereby slackened to permit the bolt 13 freedom from the constraint of the key 18, whereupon, upon closing of the knuckle, the tail-piece 8 engages with the tongue 17 to move the bolt endwise until the same falls by gravity from the position indicated in Fig. 4 to that indicated in Fig. 3, drawing the key 18 down, as shown. If attempt is now made to open the knuckle, it will be found that the surface 15 coacts with the surface 14 to form a locking connection, the bolt 13 being held fast by reason of engagement against the shoulder 16.

Automatic locking may be effected between couplers, the bolts of which are already in locking position or in that position shown in Figs. 1 and 3, by action of the cam surface 26 on the tail-piece 8 engaging under the side of the bolt so that the latter may ride up upon said cam surface and permit the passage of the tail-piece. After the tail-piece passes within the recess X beyond the shoulder 14, the bolt immediately drops down and locking of the parts is effected.

It is obvious that those skilled in the art may vary the details of construction and ar-

rangement of parts without departing from the spirit of my invention, and therefore I do not wish to be limited to such features except as may be required by the claims.

What I claim is:—

1. In a car coupler, the combination of a draw-head having a recess therein; a shoulder located in the recess; a knuckle pivoted in said draw-head having a tail-piece adapted to project within the recess; a slotted bolt disposed in the recess and adapted to engage with the tail-piece to lock said knuckle, said bolt having a tongue adapted to engage with the tail-piece to open said knuckle; a headed key having a reduced intermediate shank engaging loosely through the slot in said bolt, said key adapted to assume a slanting position through the slot in said bolt when the latter is in locking position engaging against said shoulder; and means for actuating said key to first draw the same upwardly thereby raising said bolt to clear said shoulder and release said knuckle, and secondly to cause the key to assume a vertical position whereby said bolt is moved transversely to open said knuckle.

2. In a car coupler, the combination of a draw-head having a recess therein; a shoulder located in the recess; a knuckle pivoted in said draw-head and having a tail-piece adapted to project into the recess; a slotted knuckle-locking bolt disposed in the recess and engaging against said shoulder when in locking position, said bolt having a tongue for engaging with the tail-piece to open said knuckle; a key for operating said bolt comprising a shank engaging loosely through the slot in said bolt, a head formed at the upper end of said shank, and flanges on said key below said shank and adapted to engage with the under side of said bolt to raise the same vertically when said key is actuated to release the knuckle, said key also adapted to engage against the end wall of the slot in said bolt to slide said bolt horizontally when the latter has cleared the shoulder in the recess to open said knuckle, and means for actuating said key.

3. In a car coupler, the combination of a draw-head having a recess therein and an opening in the top of said draw-head communicating with the recess; a shoulder in the recess; a knuckle pivoted in said draw-head and having a tail-piece adapted to project into the recess; a slotted bolt disposed in the recess and adapted to engage against said shoulder to lock said knuckle, said bolt having a tongue for engaging with the tail-piece to open the knuckle; a key for operating said bolt comprising a shank engaging loosely through the slot in said bolt, a head formed at the upper end of the shank, and flanges on said key below the shank and adapted to assume a slanting position through the slot in said bolt when the latter

is in a locking position; and means engaging
with the head of said key and passing
through the opening in the top of said draw-
head to draw said key up into a vertical po-
5 sition whereby said bolt may be raised to
clear said shoulder and moved horizontally
to open said knuckle.

In testimony whereof, I affix my signa-
ture, in presence of two witnesses.

EDWARD LEASON NORRIS.

Witnesses:

W. G. DOBBS,
R. W. PRIDE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
