

No. 608,764.

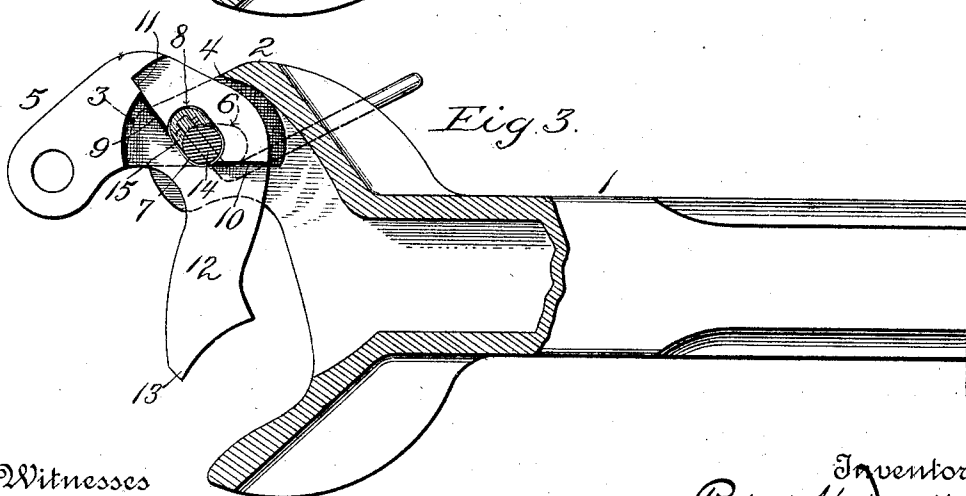
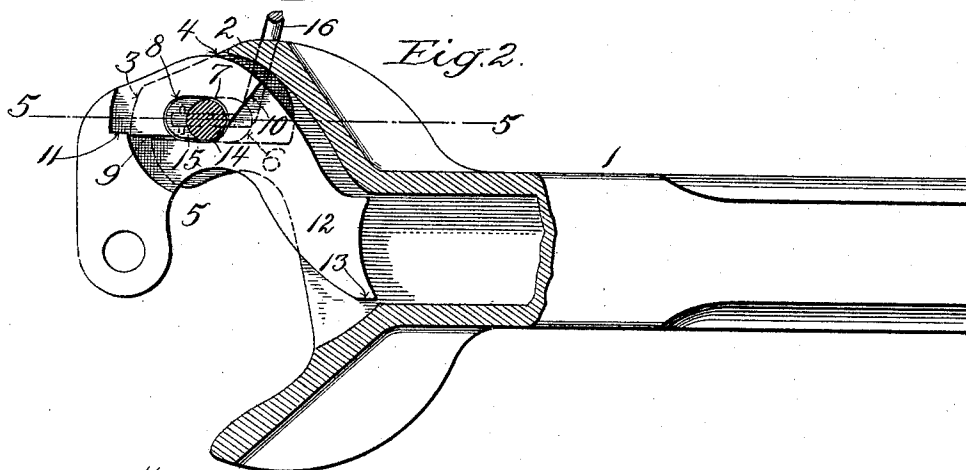
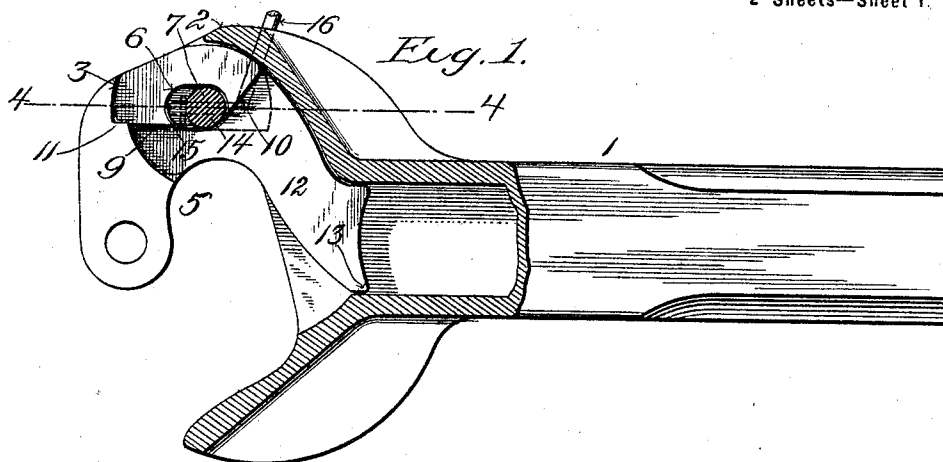
Patented Aug. 9, 1898.

R. H. DOWLING.
CAR COUPLING.

(Application filed Dec. 15, 1897.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
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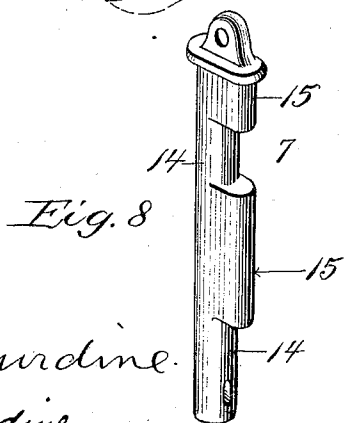
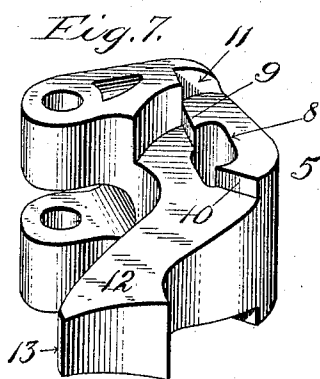
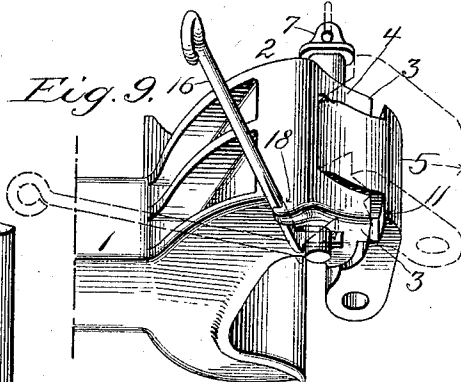
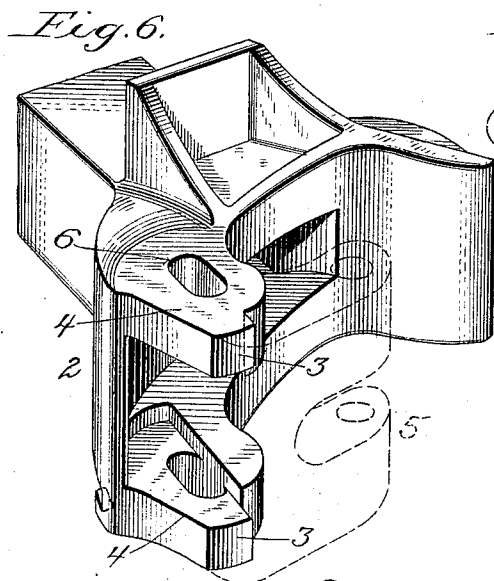
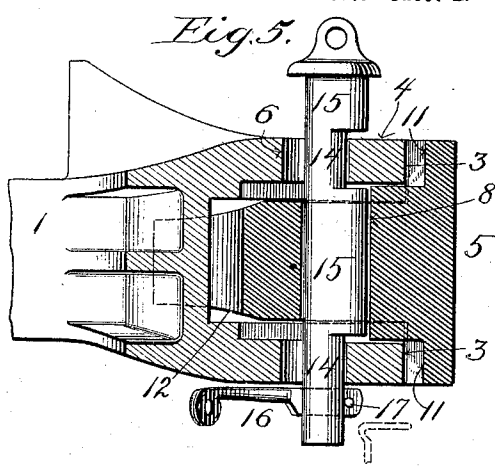
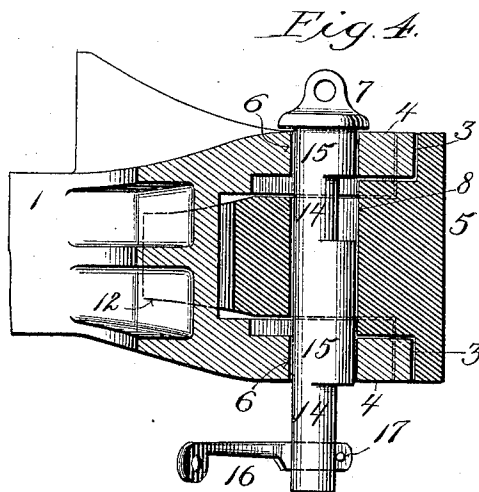
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(No Model.)

2 Sheets—Sheet 2.



Witnesses
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UNITED STATES PATENT OFFICE.

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WILLIAM H. SNYDER, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 608,764, dated August 9, 1898.

Application filed December 15, 1897. Serial No. 662,044. (No model.)

To all whom it may concern:

Be it known that I, ROBERT H. DOWLING, a citizen of the United States, residing at Newark, in the county of Licking and State of Ohio, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

This invention pertains to car-couplers of the well-known "Janney" type, wherein two coacting draw-heads are each provided with a hinged and horizontally-swinging knuckle, by the interlocking of which knuckles the cars are coupled.

The present invention consists, essentially, in a coupler of this character having the draw-heads and the knuckles formed with elongated holes or openings for the pivot-pins, which pins are made of different cross-section in different portions of their length, so that when dropped to their normal position they shall hold the knuckles against bodily outward movement and in locking engagement with the draw-heads, but that when the pins are raised to proper height the knuckles and pins may move bodily forward, thereby permitting the unlocking of the knuckles preparatory to their swinging or rotary movement about their pivot-pins.

The accompanying drawings illustrate my invention in its simplest and preferred form, but it is susceptible of modification in its details without departing from the spirit and scope thereof.

Figure 1 is a top plan view of a draw-head and knuckle constituting one member of my improved coupling, the draw-head being broken away to show the interior thereof and the arrangement of the knuckle therein; Fig. 2, a similar view with the pivot-pin lifted and the knuckle moved forward to withdraw its inner arm or extension and its forward locking-shoulder from locking engagement with the draw-head; Fig. 3, a like view showing the knuckle swung about its pivot to the unlocking position; Fig. 4, a section on the line 4 4 of Fig. 1, showing the pin in its normal position; Fig. 5, a section on the line 5 5 of Fig. 2, showing the pin in its elevated position and the knuckle and pin moved forward; Fig. 6, a perspective view of the forward end of the draw-head; Fig. 7, a perspective view of the

knuckle detached; Fig. 8, a perspective view of the pivot-pin; Fig. 9, a perspective view of the forward end of the draw-head, showing the pivot-pin elevated and the knuckle moved forward to effect its unlocking preparatory to its being swung outward to the position indicated by dotted lines.

The purpose of my invention is to produce a coupling which shall be at once strong and simple in construction and efficient in operation.

The two draw-heads, with their knuckles and pivot-pins, being precisely alike, it will be sufficient to describe and illustrate one of them.

With the stated objects in view I form a draw-head 1 of substantially the usual outline or contour of the Janney coupler, but with shoulders or abutments 2 and projecting lugs 3 formed upon the arms 4, in or between which the knuckle 5 is pivoted. The arms 4 are also provided with elongated holes or openings 6, designed to receive the pivot-pin 7, and a like elongated hole or opening is formed in the knuckle 5 for the same purpose. So, too, the knuckle is formed with shoulders 9 and 10, the former engaging with the shoulders 2 of the draw-head when the knuckle is swung inward to the coupling position and the latter engaging said shoulders 2 when the knuckle is swung outward to its uncoupling position, the shoulders 10 thus serving to limit the opening movement of the knuckle. The knuckle is further formed with vertical shoulders or abutments 11 to engage with the projecting lugs 3 of the draw-head. (Indicated by dotted lines in Figs. 1 and 2 and shown in full lines in Fig. 6.)

Referring now to Fig. 1, it will be observed that when the knuckle is in its coupling position its inner arm or extension 12 extends into the open or box-like body of the draw-head 1, the extreme nose or point 13 of said extension bearing against the side wall of the opening in the draw-head, as plainly shown in said figure. So, too, when the knuckle is in its locked or coupling position the shoulders 11 of said knuckle engage with the lugs 3 of the draw-head, and thus aid the arm 12 in holding the knuckle against rotation about its pivot-pin 7.

From this construction and arrangement of parts it will be seen that so long as the knuckle is retained in the position shown in Fig. 1 it will be impossible for it to swing or rotate about its pivot-pin and that it cannot thus swing until it is moved bodily forward in a straight line a sufficient distance to effect the disengagement of the nose 13 of arm 12 from the wall of the draw-head opening and also the disengagement of shoulders 11 of the knuckle from the lugs 3 of the draw-head. To permit this bodily movement forward, the elongated openings 6 and 8 of the draw-head and knuckle are provided and a pivot-pin 7 of the peculiar form and construction illustrated in Fig. 8 is employed. As will be seen by referring to Figs. 4, 5, and 8, the pivot-pin 7 has two cylindrical portions 14 and two portions 15 of elliptical form or of a form to fit and fill the openings 6 and 8 of the draw-head and knuckle.

The upper elliptical portion 15 is of a length or depth corresponding substantially to the length or thickness of the upper arm 4 of the draw-head, as is also the upper cylindrical portion 14. The lower elliptical portion is of a length or measurement equal to the depth or thickness of the knuckle 5, while the lower cylindrical portion 14 is of a length somewhat greater than the thickness of the lower arm 4 of the draw-head to provide for a cotter or fastening pin or an actuating-lever, as the case may be.

When the parts are assembled and the knuckle is closed to locking position, the pin 7 drops by gravity to the position indicated in Fig. 4, the upper elliptical portion 15 filling the elongated opening 6 of the upper arm 4 of the draw-head and the lower elliptical portion 15 filling the lower part of the opening 8 of the knuckle and also filling the opening 6 of the lower arm 4 of the draw-head. From this it follows that the draw-head is held in the position indicated in Fig. 1 with its inner arm 12 in locking engagement with the inner wall of the draw-head and its shoulders 11 in locking engagement with the lugs 3 of the draw-head arms 4, thus producing an exceedingly strong lock and precluding the possibility of accidental opening of the coupling.

By lifting the pivot-pin to the position indicated in Fig. 5 the circular or cylindrical sections of pin 7 are brought within the elongated openings 6 of the arms 4 of the draw-head, thus leaving the pin and the knuckle free to be moved outward to the position indicated in Fig. 5. This movement is sufficient to effect a disengagement of the nose or point 13 of arm 12 from the inner wall of the draw-head and also to effect a disengagement of the shoulders 11 from the lugs 3, and consequently to make the knuckle free to swing about its pivot.

For the purpose of thus elevating the pin I provide a suitable lever 16, which in the drawings is represented as having one end

passed through the lower end of the pin and there secured by a suitable through pin or fastening 17, though it will be readily understood that a lifting device may be attached to the upper end of the pin, if preferred. The lever 16 is carried outward toward the side of the car a suitable distance to enable it to be readily grasped by the operator, and a lug or hook 18 is formed upon the under side of the draw-head, as shown in Fig. 9, to support the lever 16 when lifted to the position indicated in Fig. 5.

When it is desired to uncouple two cars, it is only necessary to lift one or the other of the pins 7 of the adjoining draw-heads and to rest the lever 16 upon its hook or support 18. The draft or strain brought upon the knuckles will then cause the knuckle of which the pivot-pin has been lifted to move first directly outward far enough to effect the disengagement of the locking parts, as indicated in Fig. 2, and then to swing horizontally about the pivot-pin, as in Fig. 3.

Should it be desired to set the knuckle to receive the companion knuckle of another draw-head, this may be effected by first lifting the lever 16 to bring the pin to the elevation indicated in Fig. 5, then pressing the same forward to move the pin and the knuckle outward to the position also indicated in Fig. 5, after which the lever may be swung horizontally, and thus caused to throw open the knuckle, as indicated in Figs. 3 and 5.

I have indicated by dotted lines in Fig. 9 a rod or handle carried upward from the top of the pin by which to raise and turn or manipulate the same, and it will of course be understood that this is within the scope and spirit of my invention, or, in other words, that any suitable appliance may be adopted for raising, turning, or moving laterally the coupling-pin.

The precise form of the pin is unimportant, provided only it be cut away in such form as to permit it to move lengthwise of the openings 6 and 8 of the draw-head and knuckle when moved out of its normal position. The form indicated is, however, deemed best.

Having thus described my invention, what I claim is—

1. In a car-coupler, the combination of a draw-head; a knuckle having a limited movement backward and forward therein to carry it into and out of locking engagement with the draw-head; and a pivot-pin connecting said parts and of different cross-section in different portions of its length; whereby said pivot-pin when dropped to normal position is caused to lock the knuckle against outward movement, but when raised a proper distance will permit such outward movement.

2. In combination with a draw-head; a knuckle pivoted therein and adapted to move a limited distance backward and forward therein, and thereby to carry its inner arm into and out of locking engagement with the walls of the draw-head.

3. In combination with a draw-head having forwardly-projecting arms provided with elongated openings; a knuckle pivotally supported between said arms and likewise provided with an elongated opening; and a pivot-pin passing through the openings of the draw-head arms and the knuckle, of different cross-section in different portions of its length, substantially as described, whereby it may be caused to fill the elongated openings of the draw-head arms, or moved longitudinally to bring its reduced portions in alinement with said arms preparatory to a lateral movement of the pin and outward movement of the knuckle.

4. In combination with a hollow draw-head 1, having arms 4 provided with elongated openings 6; knuckle 5 provided with elongated openings 8 and with arm 12; and pivot-pin 7 having cylindrical portions 14 and elliptical portions 15, substantially as and for the purpose set forth.

5. In combination with a draw-head provided with lugs 3; a knuckle 5 having shoulders 11 and adapted to move backward and forward in the direction of the length of the draw-head, and also to swing about its pivot; and a pivot-pin connecting said parts and of different cross-section at different portions of

its length, whereby it is adapted when in one position to hold the knuckle against movement lengthwise of the draw-head and to retain the shoulders 11 in engagement with the lugs 3, and when in another position to permit such movement and consequent disengagement of the shoulders and lugs.

6. In combination with draw-head 1 having arms 4 provided with shoulders 2, lugs 3, and elongated openings 6; knuckle 5 provided with elongated opening 8, shoulders 9, 10 and 11, and arm 12; and pivot-pin 7 provided with reduced portions 14 and enlarged portions 15, substantially as described and shown.

7. In combination with draw-head 1 having arms 4 provided with elongated openings 6, and having also a hook or lug 18; knuckle 5 provided with arm 12 and elongated opening 8; pivot-pin 7 of varying section in different portions of its length; and lever 16 connected with said pin, all substantially as described and shown.

In witness whereof I hereunto set my hand in the presence of two witnesses.

ROBERT H. DOWLING.

Witnesses:

H. C. FULTON,
GEO. C. DIETER.