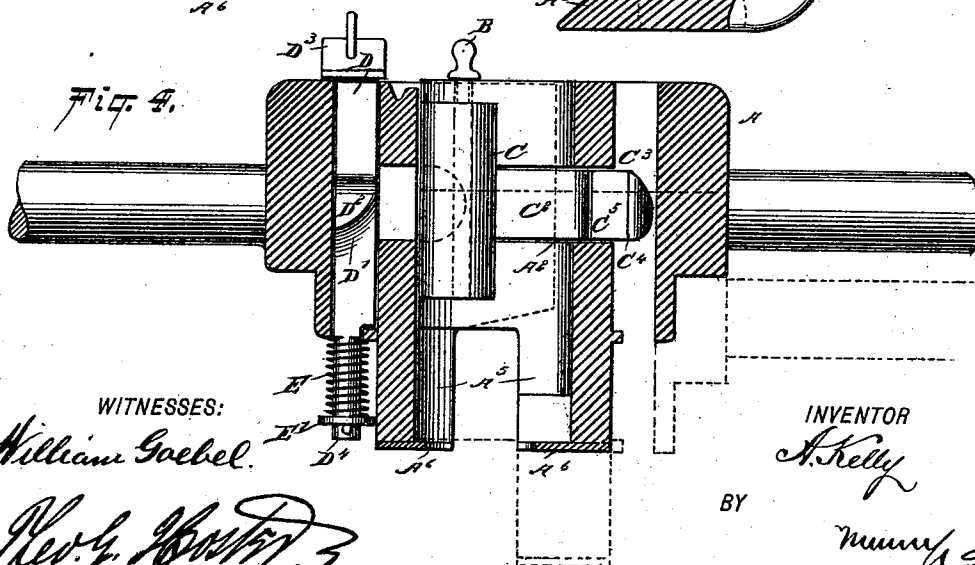
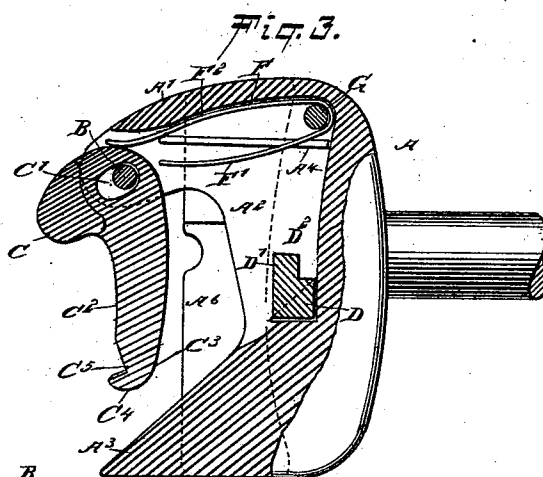
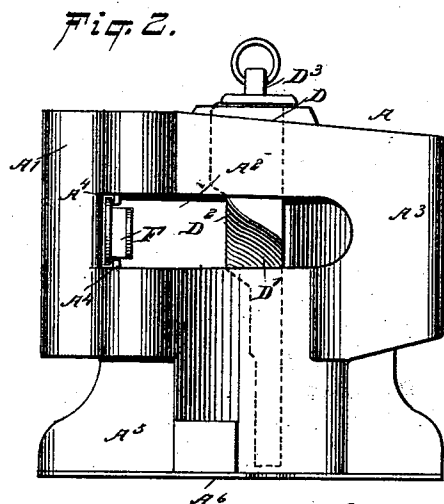
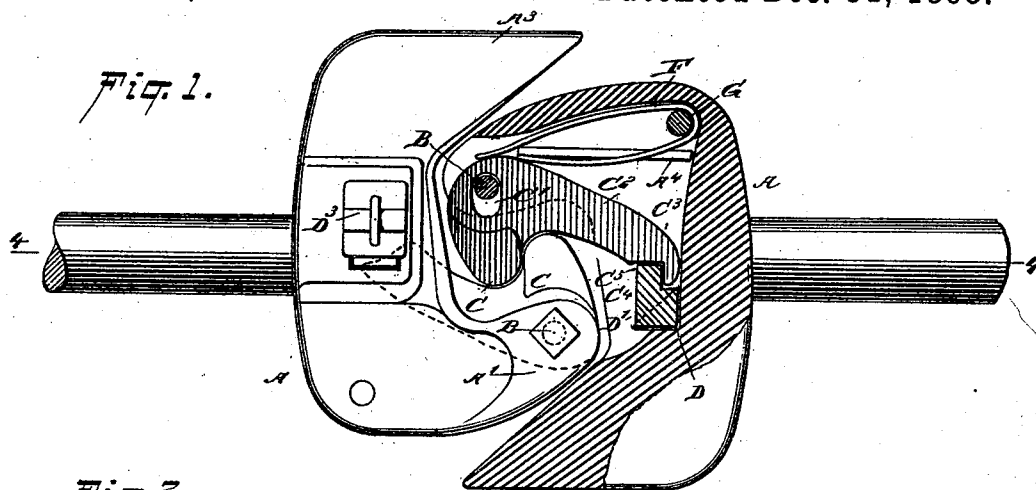


(No Model.)

A. KELLY.
CAR COUPLING.

No. 552,478.

Patented Dec. 31, 1895.



WITNESSES:
William Gaebel.

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UNITED STATES PATENT OFFICE.

ALONZO KELLY, OF HARRISBURG, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO FREDERICK W. LONG, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 552,478, dated December 31, 1895.

Application filed April 19, 1895. Serial No. 546,358. (No model.)

To all whom it may concern:

Be it known that I, ALONZO KELLY, of Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented a new and Improved Car-Coupling, of which the following is a full, clear, and exact description.

The invention relates to the Janney type of car-couplers, and its object is to provide a new and improved car-coupling which is simple and durable in construction, and arranged to readily and safely couple with the knuckles either in an open or closed position, or one open and the other closed.

The invention consists principally of a knuckle provided with an elongated pivot-opening through which passes the pivot, the elongation of the opening being in line with the coupling-arm of the knuckle.

The invention further consists of a bottom extension on the draw-head, and provided with a forward flange adapted to support the lower ends of the horns of the opposite draw-head.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

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

Figure 1 is a plan view of the improvement, showing two draw-heads with the knuckles in engagement, one of the draw-heads being in section. Fig. 2 is a front elevation of one of the heads with the knuckle removed. Fig. 3 is a sectional plan view of the improvement, and Fig. 4 is a longitudinal section of the improvement on the line 4 4 of Fig. 1.

The improved car-coupling is provided with a draw-head A, formed at one side with forwardly-projecting horns A' and A³, the horn A' carrying a vertically-disposed pivot B passing through an elongated aperture or opening C' in the knuckle C, the elongation of the said opening C' being in alignment with the coupling-arm of the knuckle. The latter is also provided with a locking-arm C² adapted to pass into a recess A² formed in the draw-head A, and adapted to engage with its outer

cam-surface C³ a beveled cam-surface D' formed on the locking-bar D, fitted to slide vertically in suitable bearings in the rear end of the draw-head A. The flat surface C⁴ at the end of the locking-arm C² is adapted to abut upon the side D² of the locking-bar D to securely fasten the locking-arm C² in place after the cam-surface C³ has passed the cam-surface D' and the locking-bar D has moved downward a sufficient distance to bring the side D² in contact with the flat surface C⁴.

The bar D is provided at its upper end with a head D³, adapted to be engaged by a suitable mechanism extending to the side or top of the car to permit the operator to pull the said bar upward whenever desired. The bar D is provided at its lower end with the reduced part D⁴, projecting beyond the bottom of the draw-head, and on this reduced part is coiled a spring E, resting with its upper end against the under side of the draw-head and with its lower end on a washer E', attached to the lower end of the reduced part D⁴. (See Fig. 4.) The spring E serves to hold the bar D normally in a lowermost position—that is, with the head D³ resting on the top of the draw-head A. Now when the bar is in this position and the knuckle C is swung rearward, then the arm C² by its cam-surface C³ engages the cam-surface D' of the bar D to move the latter upward to press the spring E until the said cam-surface C³ has passed the cam-surface D', after which the spring E draws the bar D downward to bring the flat side D² into engagement with the flat end C⁴ of the locking-arm C². The knuckle is now locked in position, and in order to loosen it again it is necessary for the operator to pull the locking-bar D upward. The arm C² is formed in its face with a notch C⁵, adapted to be engaged by the shoulder of the bar D to securely lock the arm C² in place when the knuckle is closed, as shown in Fig. 1. The knuckle is spring-pressed, and for this purpose I employ a flat spring F, bent near its middle to form two arms F' and F², of which the shorter arm engages the knuckle at its pivot end near the locking-arm C², while the longer arm F² engages the pivot end near

the coupling-arm when the knuckle is in an open position. (See Fig. 3.) The bent or middle portion of the spring F passes around a pin G, held in the draw-head A, as is plainly shown in Fig. 3.

When the knuckle C is in open position, as shown in Fig. 3, the short spring-arm F' is out of engagement with the knuckle, while the other longer arm F² still engages the said knuckle to prevent the latter from swinging out too far—that is, swinging the free end of the locking-arm C² beyond the front end of the draw-head horn A'. The top and bottom edges of the spring-arm F' are guided on longitudinally-extending lugs A⁴, forming part of the draw-head and arranged in the top and bottom of the recess A².

The front end of each draw-head A is formed at its bottom with an extension A⁵, provided with a forwardly-extending flange A⁶, adapted to receive and support the bottoms of the horns A' and A³ in case the opposite draw-head should become detached from its car, so that this detached draw-head will slide downward while coupled to the other draw-head until the horns rest upon the opposite flange A⁶, so as to prevent the coupling from being lost.

Now it will be seen that by the arrangement described the elongated opening or aperture C' in the knuckle C will permit of coupling two cars in case both knuckles of the two opposite draw-heads should be in a locked position, as the said spring-pressed knuckles can then yield transversely a sufficient distance to permit the coupling-arms of the knuckles to pass each other, and to finally move into coupling engagement, as indicated in Fig. 1. It will further be seen that by the arrangement described either of the two knuckles may be in an open or closed position, or both knuckles may be in an open position, at the time of coupling, as the said knuckles will always be in the proper position to effect a sure coupling when the draw-bars are moved together.

Having thus fully described my invention,

I claim as new and desire to secure by Letters Patent—

1. A car coupling, provided with a spring pressed knuckle having a coupling arm and a locking arm, the said knuckle having an elongated pivot opening through which passes the pivot, the elongation of the opening being in line with the coupling arm of the knuckle, whereby the said knuckle is adapted to yield transversely when in the locked position, to permit the coupling arms to pass each other and move into coupling engagement, substantially as shown and described.

2. A car coupling, comprising a draw head, a spring pressed knuckle having an elongated pivot opening through which passes the pivot, the said knuckle being mounted to swing and having a yielding transverse movement, the knuckle being provided at its locking arm with a cam surface and a flat surface, and a spring-pressed locking bar fitted to slide in the said draw head and formed with a cam surface adapted to be engaged by the cam surface of the locking arm, to move the said bar upward, the said bar being also provided with a flat surface adapted to engage the flat locking surface of the locking arm, substantially as shown and described.

3. A car coupling, provided with a knuckle, and a flat spring having two arms engaging with their free ends the pivoted end of the knuckle at opposite sides of the pivot, substantially as shown and described.

4. A car coupling, provided with a knuckle having a coupling arm and a locking arm, the said knuckle having an elongated pivot opening through which passes the pivot, the elongation of the opening being in line with the coupling arm of the knuckle, and a spring adapted to engage the pivoted end of the knuckle at opposite sides of the pivot, substantially as shown and described.

ALONZO KELLY.

Witnesses:

BENJ. J. II. DOUGLASS,
SAMUEL M. MARSHALL.