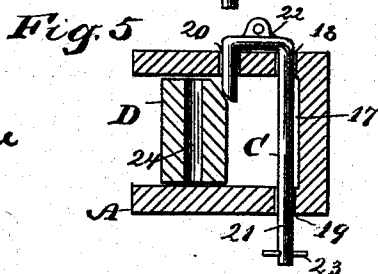
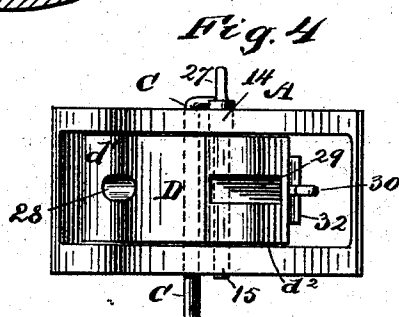
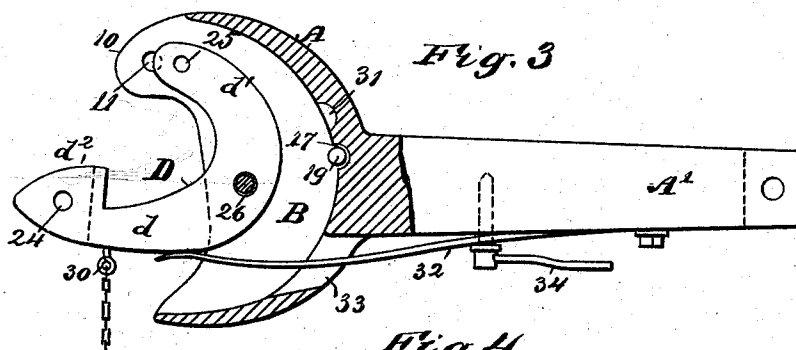
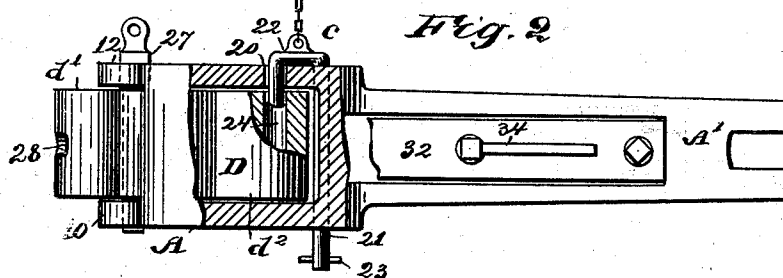
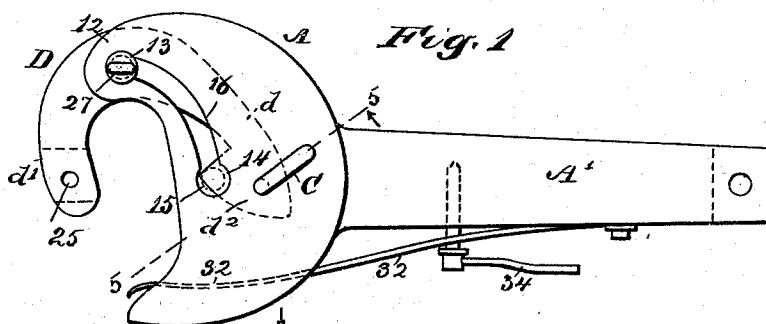


S. A. YEAGER, W. I. LUCKENBACH & A. P. BALLIET.
CAR COUPLING.

Patented Sept. 12, 1893.



WITNESSES:

WITNESSES:
J. A. Bergeton
L. Sedgwick

INVENTORS

S. A. Yeager
W. J. Luckenbach
A. P. Balliet
By Munn & Co
ATTORNEYS.

UNITED STATES PATENT OFFICE.

SAMUEL A. YEAGER AND WILSON I. LUCKENBACH, OF BETHLEHEM, AND
ALFRED P. BALLIET, OF COPLAY, PENNSYLVANIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 504,958, dated September 12, 1893.

Application filed August 12, 1892. Serial No. 442,872. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL A. YEAGER and WILSON I. LUCKENBACH, of Bethlehem, in the county of Northampton, and ALFRED P. BALLIET, of Coplay, in the county of Lehigh, State of Pennsylvania, have invented a new and useful Improvement in Car-Couplers, of which the following is a full, clear, and exact description.

Our invention relates to an improvement in car couplers, and has for its object to provide a coupler of the knuckle type, whereby the knuckle may be used in the ordinary way to couple with an opposed knuckle drawhead, or wherein the knuckle may be expeditiously and conveniently shifted in a manner to convert the coupler into one of the Miller type, in which a spring-controlled coupling hook is located near the center of the drawhead.

A further object of the invention is to construct the coupler in an exceedingly durable manner, the drawhead departing but little from the shape used in knuckle couplers and the knuckle being exceedingly strong, and the pivot pin and knuckle being capable of being shifted to one side or to the central portion of the drawhead.

Another feature of the invention is to so locate a spring in the drawhead that it will not interfere with the knuckle when the coupler is used as a knuckle coupler, but which spring may be brought quickly into play when the coupler is to be converted into one of the Miller type.

Another feature of the invention consists in the construction and location of the locking pin for the knuckle, rendering it possible for the pin to be readily manipulated from the sides or from the top of the car, the pin constituting also an efficient and positive lock.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out 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 plan view of the coupler, the knuckle being shown in its side position.

Fig. 2 is a partial side elevation of the coupler looking in direction of the outer end of the knuckle, a portion of the drawhead being broken away and likewise a portion of the knuckle. Fig. 3 is a horizontal section taken through the drawhead and a portion of the shank, the knuckle being shown in a central position and as adapted to couple with a Miller coupler. Fig. 4 is a front elevation of the drawhead, the knuckle being in the position shown in Fig. 2; and Fig. 5 is a section taken practically on the line 5-5 of Fig. 1, illustrating the locking pin in its locking position.

The drawhead A, is shaped in substantially the same manner as the drawheads of the Janney or knuckle type of couplers, the said drawhead being provided with the usual knuckle chamber B. In one lower side horn or extension 10 of the drawhead an aperture 11, is produced, and in the upper aligning horn or projection 12 an opening 13, is made immediately over the lower aperture 11; and near the front central portion of the drawhead at top and bottom openings of a circular character are produced, the upper openings being designated as 14 and the lower openings as 15, the lower openings being shown in dotted lines in Figs. 1 and 4. The upper openings 13 and 14, are connected by a curved slot 16, as best shown in Fig. 1; and at or about the center of the rear wall of the knuckle chamber a vertical channel 17, is provided, while at top and bottom of this channel openings are made, designated respectively as 18 and 19. Somewhat in advance of the upper opening 18 a second opening 20, is made in the upper portion of the drawhead, the two openings 20 and 18 being preferably located somewhat diagonally of the drawhead.

The openings 18, 19 and 20, are adapted for the reception of a locking pin C, and this locking pin, as is best shown in Fig. 5, comprises a main or body member 21, which extends downward through the aligning openings 18 and 19 and through the channel 17; and the body member of the pin is of much greater length than the thickness or height of the drawhead through which it is to pass.

In addition to the body member an angular or practically L-shaped head member 22, is utilized in the formation of the pin, the verti-

cal section of the head member being adapted to enter and pass through the upper opening 20 in the drawhead, while the horizontal section of the head extends diagonally across the top of the drawhead, as shown in Fig. 1.

The head is usually provided with an eye for the reception of a chain so that the pin may be raised from the top or from the sides of the car, and the pin is further provided at its lower extremity with a stop 23, limiting its upward movement. The pin may also be elevated by means of a lever pressing against the lower end of the pin. When the medium employed for elevating the pin is disengaged from it the pin will drop to its locking position by its own gravity. The lower extremity of the vertical section of the head member of the pin is beveled.

The knuckle D, is clearly illustrated in plan view in Fig. 3. It is curved and one side or member d is much flatter or straighter than the opposing member d' . The member d at its extremity is provided with a latch head d^2 , and both members at their extremities have produced therein vertically-arranged openings, said openings being designated as 24 and 25. The knuckle is likewise provided at or near its central portion with a third opening 26, and this latter opening is adapted to receive a pivot pin 27, no matter in what position the knuckle may be placed. Each extremity of the knuckle is provided with an opening horizontally produced therein for the reception of a link when the drawhead is to be used in connection with a link and pin coupling; these openings cross the vertical openings 24 and 25, and are designated as 28 and 29. Upon the flat or outer side of the member d of the knuckle an eye 30, is located, and a concavity 31, is produced in the rear wall of the knuckle chamber to receive this eye when the knuckle is used in the ordinary manner.

A spring 32, is secured at its rear end to one side of the shank A' of the drawhead, and this spring curves outward from the shank and extends within the knuckle chamber of the drawhead through a passage way 33, as shown in Fig. 3; and normally the forward portion of the spring 32, that is, its free end, will engage with a side wall of the said knuckle chamber. The spring can only be forced inward toward the center of the chamber when it is required to assume that position, and this is accomplished ordinarily by means of a handled set screw 34, which is passed through the spring ordinarily between its center and attached end and into the shank of the drawhead, as is shown in Figs. 1, 2 and 3.

When the coupler is to be used as a knuckle coupler of the Janney type, the latch-headed end of the knuckle is that which is to enter the knuckle chamber, the opposite end being the hook or coupling end or that located outside of the drawhead as shown in Fig. 1; and the pivot pin 27 is at this time passed through the central aperture in the knuckle and

through the top and bottom openings 13 and 11, produced in the side horns 12 and 10. The knuckle when in this position operates in coupling and in uncoupling in substantially the same manner as a knuckle of the Janney type; and when the knuckle is in its coupling position the vertical section of the head of the locking pin is made to enter the opening 24 in the latch-head extremity of the knuckle, as shown in Fig. 2. When an uncoupling is to be made the locking pin is elevated and the knuckle is thereby released. The pin may then be permitted to drop, as shown in Fig. 5 and the coupling will be automatic, as when two opposing knuckles are brought into engagement the inner ends of the knuckles will be forced inward within the knuckle chamber, and a beveled surface on the inner end of the knuckle shown in Fig. 5 as immediately back of the opening 24, will engage with the beveled end of the head portion of the pin and automatically raise the pin. The moment, however, that the opening 24, is brought beneath the head portion of the pin the pin enters that opening and the locking is complete.

When it is desired to convert the coupler into a coupler of the Miller type, the pivot pin 27, is raised from the bottom opening 11 in the side horn 10 of the drawhead, and the said pivot pin is carried inward along the slot or channel 16 until it enters the central opening 14, at which time it is allowed to drop into the lower and registering opening 15, and what was the inner portion of the knuckle is carried outward, which brings the latch-head d^2 out from the center of the drawhead while the opposite end of the knuckle is contained within the drawhead chamber, as shown in Fig. 3. The spring 32, is then depressed until its free end engages with the projecting member of the knuckle, as is likewise shown in Fig. 3, and that member of the knuckle is prevented from moving in one direction unless the tension of the spring is overcome, while in the opposite direction it has a limited movement, since the member d' of the knuckle will quickly engage with a side wall of the knuckle chamber. An uncoupling is effected in this form of the coupler in the same manner as in couplers of the Miller type, that is, by attaching a chain to the eye 30 of the knuckle, whereby the latch-head member may be drawn outward to disengage from an interlocking knuckle, and carried against the tension of the spring 32.

It will be understood that the pivot pin is of the largest diameter near its upper end; therefore, the upper openings 13 and 14, are of much greater diameter than their corresponding lower openings. This form of coupler is exceedingly simple, it is durable and economic, and it may be expeditiously and conveniently converted from a coupler of the Janney type to one of the Miller type, and vice versa, whenever occasion may demand. Having thus described our invention, we

claim as new and desire to secure by Letters Patent—

1. As an improved article of manufacture a coupling knuckle D curved or elbow shaped provided with a hook d^2 at one end, a pivot aperture 26 at or near its middle and end apertures 24, 25, substantially as set forth.

2. The combination with a draw head having a middle and an end aperture, of a curved or elbow like knuckle provided with a hook at one end, and an aperture in its bend, and a pivot pin adapted to pass through either one of the draw head apertures and said aperture in the bend of the knuckle and means for locking the hooked end of the knuckle when said knuckle is pivoted in the end draw head aperture, substantially as set forth.

3. In a car coupler of the type described, the combination, with a drawhead, a spring extending within the same, and an adjusting mechanism for the spring, of a knuckle having a shifting fulcrum, whereby either end of the knuckle may be made the outer or coupling end, as and for the purpose specified.

4. In a car coupler of the type described, the combination, with a drawhead and a knuckle pivoted therein, the knuckle being provided with a pin opening in its inner end, of a locking pin comprising an essentially straight body section and an angular head, the body section and head having free vertical movement in the drawhead, and the

head section being adapted to enter the pin opening in the knuckle, substantially as shown and described, whereby an automatic coupling may be effected and an uncoupling be produced by the elevation of the pin.

5. In a car coupler of the type described, the combination, with a drawhead and its shank, the drawhead being provided in one side horn with upper and lower registering openings, and upper and lower central registering openings, the upper openings being connected by a curved passage-way, of a knuckle having one end formed as a latch head, the said knuckle being provided at each extremity with a pin opening and an opening near its center, a pivot pin passed through the central opening of the knuckle and through one of the aligning sets of openings in the drawhead, a locking pin adapted for engagement with the knuckle, having free vertical movement in the drawhead and having an essentially inverted U-shaped formation at its upper end, a spring attached to the shank and extending within the drawhead, and an adjusting mechanism connected with the spring, as and for the purpose specified.

SAMUEL A. YEAGER.

WILSON I. LUCKENBACH.

ALFRED P. BALLIET.

Witnesses:

NEVIN J. LOOS,

WM. C. LOOS.