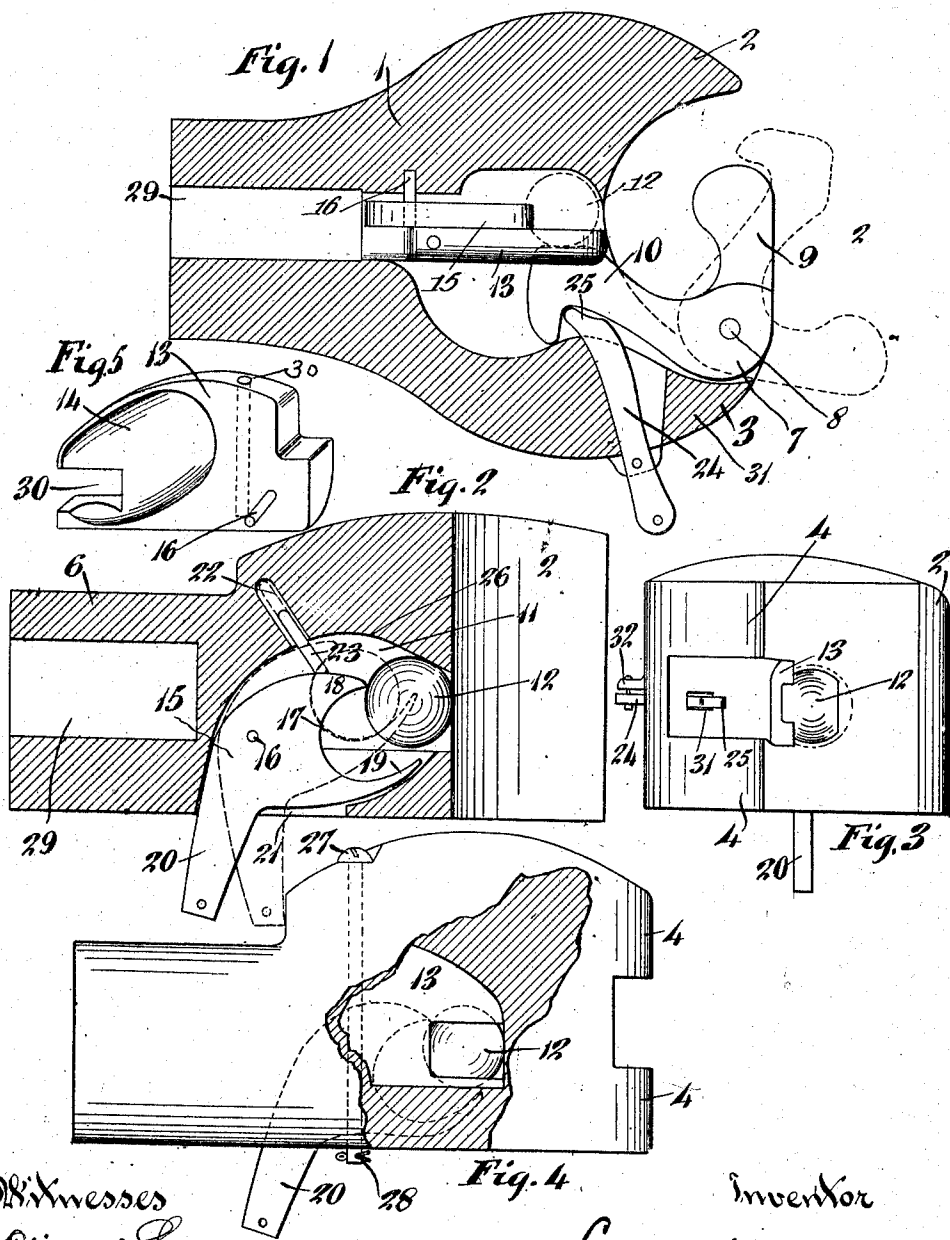


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CAR COUPLING.

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CAR-COUPLING.

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To all whom it may concern:

Be it known that I, LONDON BATCHLOR, a citizen of the United States, and a resident of the city of Lawrenceburg, in the county of Dearborn and State of Indiana, have 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 drawing, forming a part of this specification.

The object of my invention is to provide a coupler of the Janney type, in which a ball is employed to lock the knuckle.

The invention consists of that certain novel construction and arrangement of parts to be hereinafter particularly pointed out and claimed, in which the necessity for springs of any kind in connection with the lock is avoided, and in which the locking parts are so arranged that they cannot jar loose to release the knuckle, also that the knuckle shall be automatically released should the car turn over or be suspended over an embankment.

In the drawings, Figure 1 is a horizontal section of my improved coupler. Fig. 2 is a central vertical section of the same. Fig. 3 is a front elevation, partly broken away, with the knuckle removed. Fig. 4 is a side elevation, also partly broken away. Fig. 5 is a perspective view of the removable casing for the locking ball.

1 is the drawhead, preferably a solid casting in a single piece, provided with the usual twin jaws 2, 3, with one of the jaws formed with ears 4, 4, which form a recess for the pivotal mounting of the knuckle 7 by the knuckle pin 8. The knuckle 7 is formed with the usual tongue 9 and with the locking arm 10.

The numeral 11 designates a recess formed in the body of the drawhead to receive the ball 12 which forms the lock for the knuckle. In order that the ball may be confined in the recess, and that it may be located in place in assembling the parts, the side wall of the recess is made in a separate plate 13, hollowed out on the inside to form a recess 14 to correspond with the shape of the recess in the opposing wall, so that the two recesses form the compartment or chamber 11 for the ball. When the ball is located in the chamber, the side wall plate is placed in position with the lateral pin 16, which

is secured to the plate entering a suitable socket in the opposing wall. Pivotaly mounted on this pin 16 in the chamber 11, between the side walls, is the lock lever 15. The lever is provided with a semi-circular recess 17 forming a claw for the lever, one point of the claw 18 bearing on the ball 12 to hold it in its forward position, and the other point of the claw 19 resting underneath the ball.

The numeral 20 designates the actuating arm of the locking lever which passes vertically downward through the slot 21 cut through the drawhead. The locking lever is so weighted that the center of gravity lies to the right of and below the pivotal point of the lever as viewed in Fig. 2 by the full lines.

Sliding in a recess 22 formed through the roof of the ball chamber is the pin 23. This recess is formed at an angle so that the pin 23 will by its own weight rest upon the upper edge of the locking lever 15 and tend to hold the lever in its normal position. The pin 23 is loosely mounted in the opening in the chamber, however, so that when the arm 20 of the locking lever is moved forward into the position shown in dotted lines in Fig. 2, the pin will be raised.

Mounted in a lateral slot 31 in the drawhead is a lever 24 which extends outside the coupler and the inner end of this lever 25 bears against the hook member 10 of the knuckle. In order not to weaken the jaw of the drawhead, this lever is pivoted to an overhanging plate or ledge 32 which projects from the side of the drawhead above the slot through which the lever passes. This ledge also serves as a guard to prevent water entering the slot.

When the ball 12 is in its normal position in the forward portion of the ball chamber, the ball stands in the pathway of the rounded inner end of the hook 10 of the knuckle, and the knuckle will be locked, so that when the knuckle is engaged by a corresponding knuckle on another coupler, the two cars will be coupled together. It will be evident from this construction that when the lever arm 20 is pulled forward, the lower prong 19 of the claw on the locking lever will raise the ball 12 and allow it to drop into the recess between the claws and the ball will be carried by the claws into the position shown in the dotted lines in Fig. 2. When in this

position, the ball will be raised out of the pathway of the hooked end of the knuckle, and the knuckle will be released to rotate into the position shown in dotted lines in Fig. 1. This movement will be brought about either by the pull on the tongue 9 of the knuckle or by operating the lateral lever 24.

It will be evident from the foregoing construction, that there are no openings from above into which water and dirt can seep to clog up the operation of the coupler. The drawhead itself is cast in a single piece, properly cored out, the body of the drawhead being formed with the recess or chamber for the ball with the roof 26 of the ball chamber an integral part of the drawhead, the only separable piece of the drawhead is the lateral wall 13 of the ball chamber, and this is held in place by the bolt 27 which is passed down through the top of the head and through a vertical hole 30 in the lateral wall 13 of the ball chamber and through the bottom of the drawhead where it is secured by the cotter pin 28, or in any other suitable way.

The parts are readily put together. The ball 12 is inserted in place, the lever 15 with its claw located in the chamber and the wall 13 carrying the pivot pin 16 for the lever placed in position through the cored out front portion. The knuckle is then pivoted to the jaw and the coupler is ready for use.

A cavity 29 is left in the two parts of the drawhead for the reception of the usual drawbar, and the two levers 20 and 24 are suitably connected by links with the lever that can be actuated from the side of the car, so that the coupler can be operated without going between the cars.

Inasmuch as the center of gravity of the locking lever 15 is forward of and below the pivot of the lever, the ball will always be held by the claw 18 at the forward end of the ball chamber, and the lateral wall of the ball chamber is provided with a slot 30, through which the inner end of the hook 10 of the knuckle projects, so that the ball normally stands in locking position. When the knuckle is released, the inner end of the hook 10 of the knuckle when it is rotated back to locked position, readily pushes the ball aside to allow for the passage of the hook and the ball drops back into locking position assisted by the weight of the locking lever and the pin 23. The weight of the locking lever and the pin 23 is amply sufficient to prevent the ball from being displaced from locking position under any jars to which the car

may be subjected. At the same time, should the car be overturned, the weight of the locking lever will then tend to raise the ball 12, the claw 19 coming in contact with the ball and the knuckle will be released. This same action is brought about when the coupler is inclined upwardly to an angle of the vertical of about thirty degrees, so that in case of any accident, the coupler on the car which is hanging over the edge of an embankment or bridge will be automatically released to allow the car to drop without pulling the next car with it.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a car coupler, the combination of the drawhead having a bifurcated jaw and a rotating knuckle, of a ball chamber within the drawhead, a ball movable therein, the lateral wall of the ball chamber having a slot therein through which the tail of the knuckle projects, a locking lever pivoted on a horizontal axis with its center of gravity in front of and below the pivotal point, and provided with claws to engage the ball on opposite sides, and a recess to receive and carry the ball, the upper claw of the locking lever holding the ball within the pathway of the travel of the knuckle hook, and means whereby the knuckle may be rotated when the ball is shifted by the shifting of the locking lever.

2. In a car coupler, the combination of the drawhead having a bifurcated jaw and a rotating knuckle, of a ball chamber within the drawhead, a ball movable therein, the lateral wall of the ball chamber having a slot therein through which the tail of the knuckle projects, a locking lever pivoted on a horizontal axis with its center of gravity in front of and below the pivotal point, and provided with claws to engage the ball on opposite sides, and a recess to receive and carry the ball, a pin loosely mounted in inclined position in a recess in the roof of the ball chamber and bearing upon the locking lever to assist in holding the lever in position to hold the ball within the pathway of the travel of the knuckle hook, and means whereby the knuckle may be rotated when the ball is shifted by the shifting of the locking lever.

LONDON ^{his} X BATCHLOR.
mark

Attest:

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