(No Model.) 2 Sheets—Sheet 1.

J. A. HINSON.

CAR COUPLING.

No. 550,505. Patented Nov. 26, 1895.

Fig. 1.

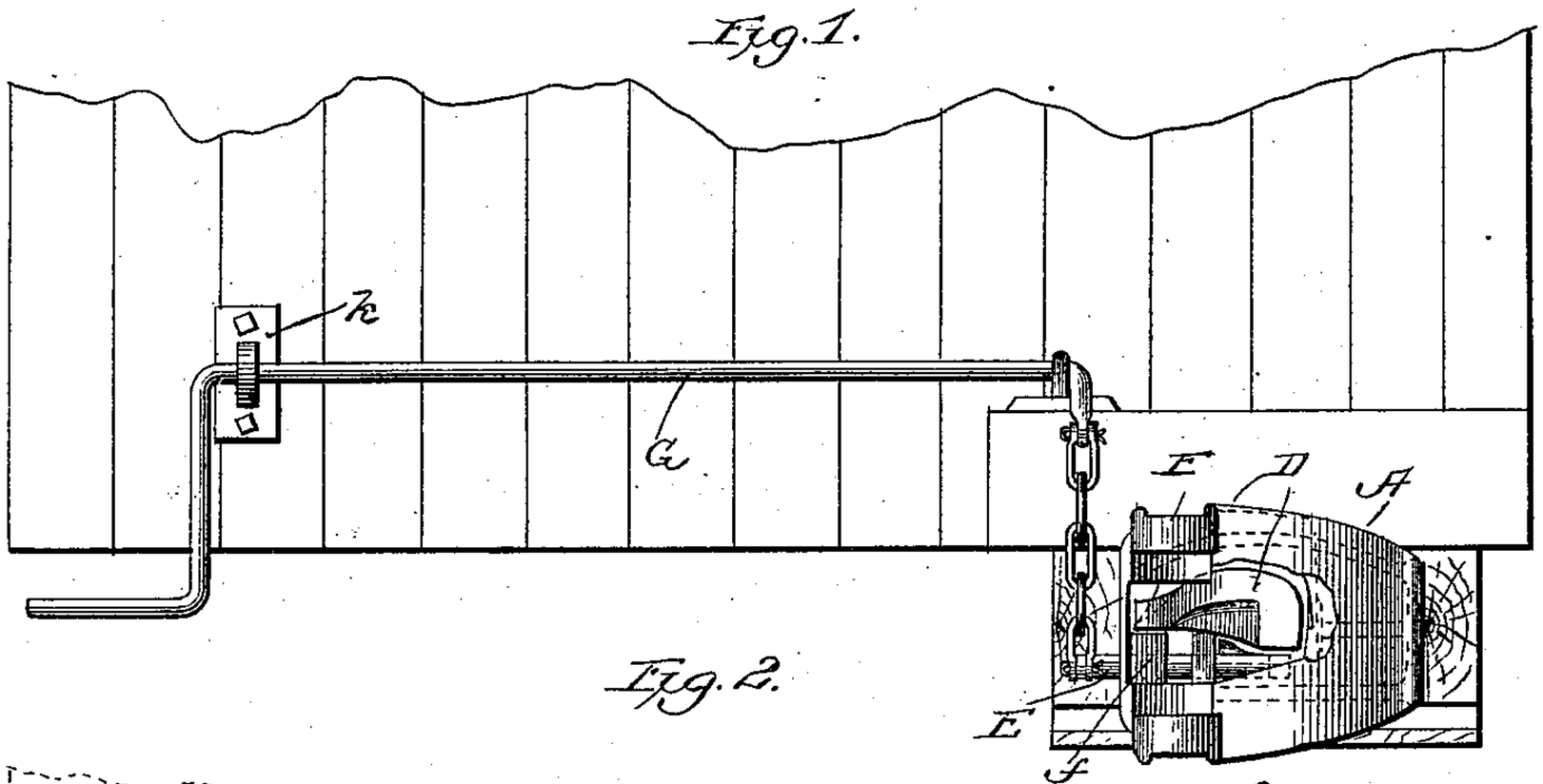


Fig. 2.

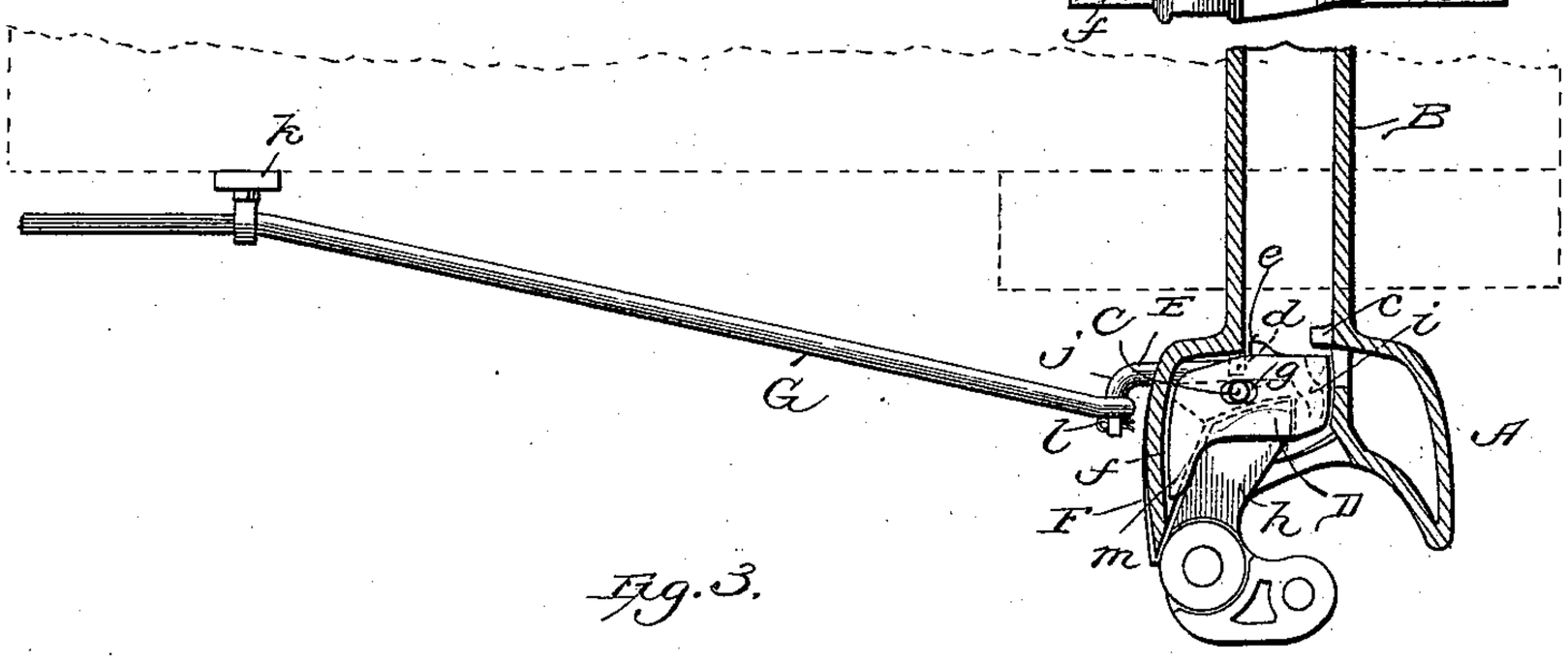
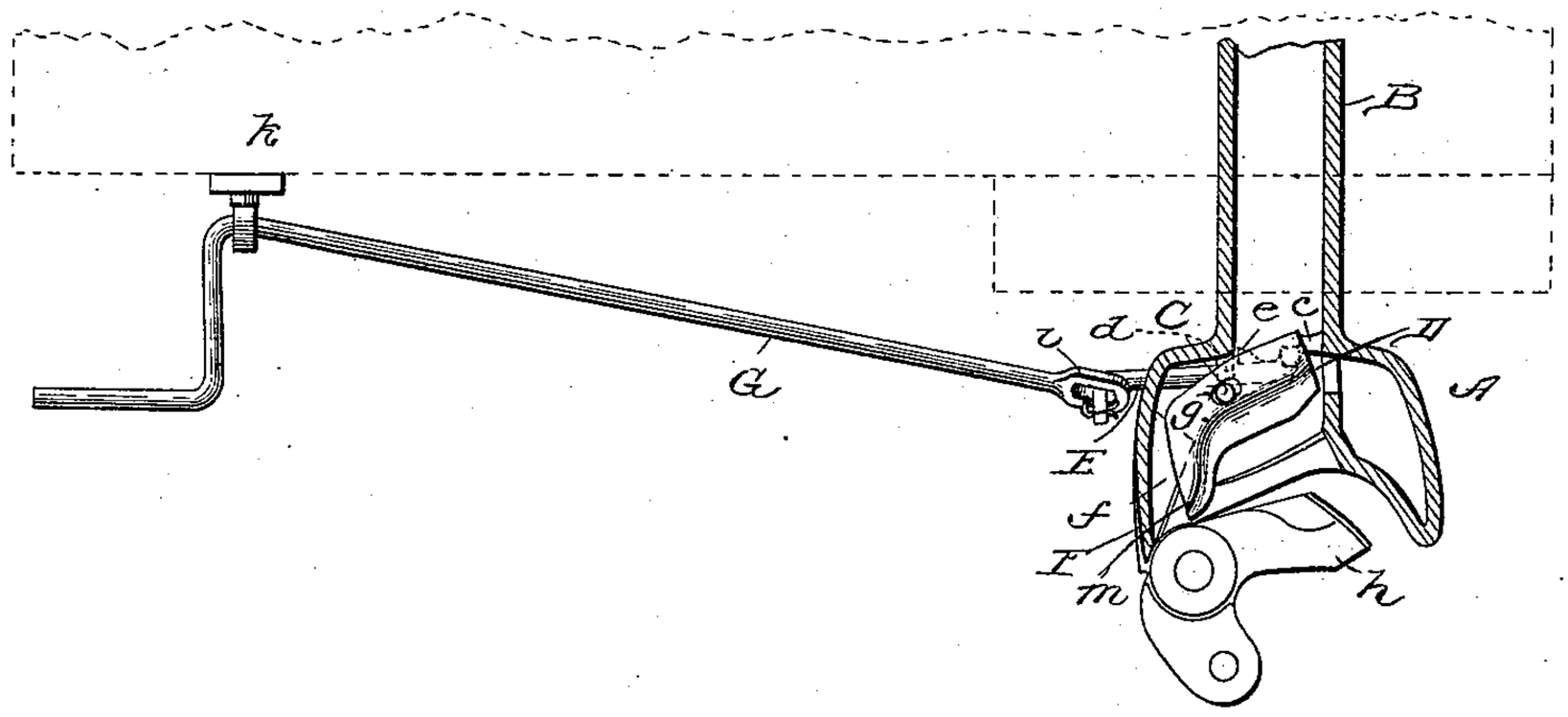


Fig. 3.



Witnesses:
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G. M. Copenhaver.

Inventor:
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by W. A. Redmond
Attorney.

(No Model.) 2 Sheets—Sheet 2.

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CAR COUPLING.

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Fig. 4.

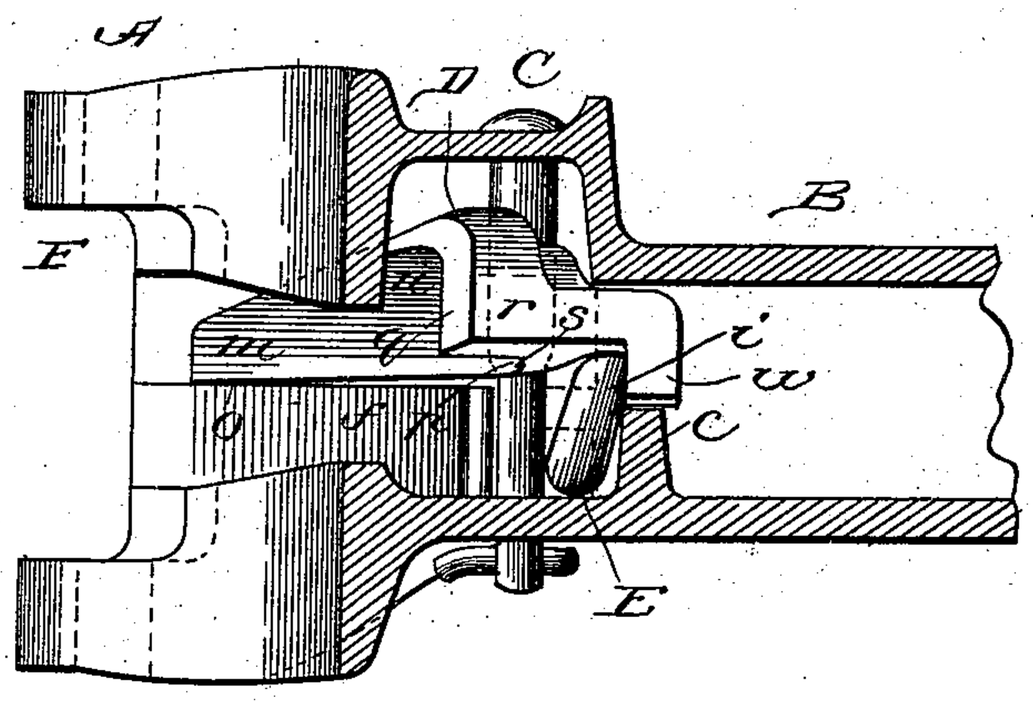
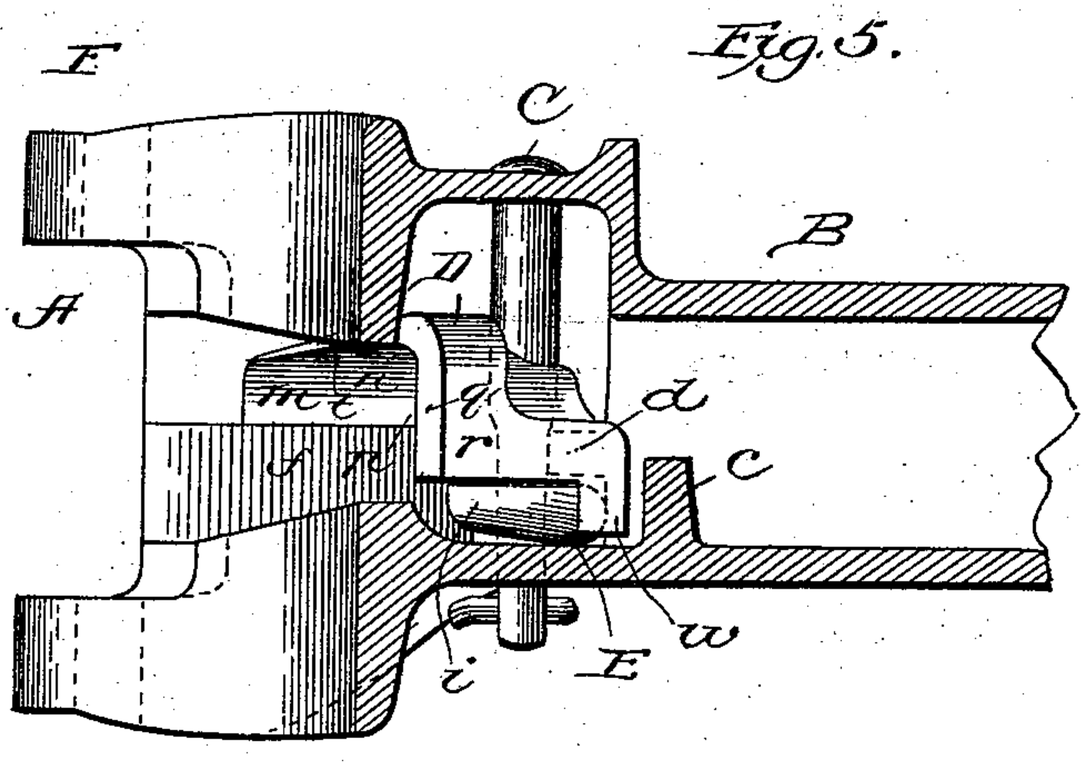


Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

JAMES A. HINSON, OF CHICAGO, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 550,505, dated November 26, 1895.

Application filed September 9, 1895. Serial No. 561,985. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. HINSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Couplings; 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.

This invention relates, generally, to car-coupling devices, and particularly to devices for locking the knuckles thereof in their closed position and for opening the same into open position to form a coupling with a mating-coupler; and it has for its object to provide a simple, durable, and efficient locking-latch located wholly within the draw-head and operative from a point at the side of the car, whereby the knuckle may be released and at the same time thrown out or into its opened position, and in which the closing of the knuckle will operate the latch to throw it into its locking position; and it consists in the parts and combinations of parts hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a front elevation of my improved coupling, the draw-head being partly broken away, in position on a car; Fig. 2, a horizontal longitudinal sectional view through the same, showing latch or lock in its closed position; Fig. 3, a horizontal longitudinal section through the same, showing coupling open; Fig. 4, a vertical longitudinal section of the coupler, showing the lock or latch in its raised or unlocked position; and Fig. 5, a horizontal longitudinal section of the coupler, showing the lock or latch in its lowered position.

Similar letters refer to similar parts throughout all the views.

The draw-head A is preferably cast with a hollow guide or guard-arm, having an integral interior strengthening-web *b*, as indicated in dotted lines, Fig. 1; but it may be cast solid with exterior strengthening-webs, in the usual manner, if desired.

Within the draw-head, at or near its junction with the draw-bar B, a lug or projection *c* is formed at one side, and at the opposite side of the opening of the draw-bar is cast a forwardly-projecting lug *d*, which stands above the bottom wall of the draw-head and extends in a line with and closely adjacent to the pin C, on which the lock or latch D rises and turns. The lug *d* serves two important purposes in my coupling, the first being to form a buffing surface for the pin C to take the strain or concussion incident to the impact between couplers and transfer the same to the draw-bar and thus reduce to the minimum the liability of fracturing or bending the pin, and, second, to prevent the accidental withdrawal of the short rod or lever E, which I employ to operate the lock or latch and which extends or passes under said lug *d*, this purpose being accomplished by forming a lug *e* on one side of the lever or rod which, when the parts are in their proper positions, engages the lug *d* and thereby is maintained in position.

On the knuckle-arm F of the draw-head and within the latter I cast or otherwise form a ledge *f*, on which one end of the lock or latch D is supported. The pin C on which the lock or latch turns is formed with a wide head to completely cover the perforation in the draw-head through which it extends, thereby excluding foreign substances from the interior of the draw-head, and said pin is flattened for a portion of its length at its lower end and passes through a rectangular slot in the lower wall of the draw-head and is secured by a key, as shown, thereby preventing it turning in the perforation and slot.

The lock or latch D is formed with an elliptical-shaped perforation *g*, through which the pin passes in order to permit of a limited tilting movement of the lock or latch on the pin, so that one end of the lock or latch may be raised by the entrance thereunder of the tailpiece *h* of the knuckle in forming a coupling should it happen that the lock or latch D has accidentally dropped down, and also by the toe *i* of the lever E, which, as clearly shown, extends beneath the end of the lock or latch and raises the same when the lever or rod E is turned or rotated. The rod or lever E enters the draw-head through an opening in its side wall and, passing under the lug *d*, extends across the draw-head to its opposite wall, and its end outside of the draw-head is bent at right angles, as at *j*, and re-

ceives thereon the slotted end, as at *l*, of a lever G, which extends to the side of the car and is supported in a bracket *k*, secured thereon. The toe *i* is bent or extends from the rod at right angles and then is bent slightly laterally, so as to extend beyond the end of the rod, which, when the lock is down, abuts loosely against the projection *u* of the lock, while the end of the toe *i* extends in front of the same.

The lever G is formed with a crank-handle, as usual, and the slot *l* thereof is elongated, so as to permit of a limited play of the lever or rod E thereon, caused by the lateral play or movement of the draw-head.

The rear line of the lock or latch D corresponds to the rear wall of the cavity of the draw-head and is formed with a forwardly-projecting end *m*, which is rounded off or tapered on its upper surface toward its rear side or edge and on its lower or bottom surface is tapered, as at *n*, toward its end, but at the end is flat, as at *o*, where it rests on the ledge *f*. The front edge of the lock or latch is cut out to form a recess *p*, having a vertical end wall *q*, formed by the downwardly-extending projection *r*, and a vertical rear wall *s*, while the upper edge of the lock or latch is chamfered, as at *t*. A projection or lug *u* is also formed on the lock or latch which extends below the projection *r*, for a purpose to be described.

The end of the tailpiece of the knuckle extends into the recess *p* and bears against the vertical wall *q* of the projection *r* when the parts are in their closed or locked position.

From the above description it will be understood that the turning of lever G will turn the rod or lever E and thus turn up the toe *i*, which engages the lower side of the shoulder or projection *r*, and thus raise or tilt the end of the lock or latch till the bottom of the projection *u* is on a level with the top of the projection *c*, when the further movement of the rod E causes the toe *i* to engage the said projection *u* and rotate the lock, thus causing the end *m* of the lock to engage and swing outwardly the knuckle. Thus it will be observed that the lock or latch is raised at one end, so as to release the knuckle, and the lock or latch is left supported in its raised position on the projection *c*. The projection *c* also serves as a buffer to take the impact off the lock should a link be driven against it.

Owing to the shape of the lock or latch, as hereinbefore described, its end *m* extends behind the knuckle-tailpiece, and when the opposite end of the lock is raised sufficiently to clear the projection *c* the further movement given the lock is a rotating movement, which causes the end *m* to engage and throw or swing outwardly the knuckle-tailpiece into position to form a coupling with a mating knuckle, and it will also be observed that the return movement of the tailpiece in closing engages the end *m* of the lock or latch and moves the same back or rotates it on its pin, thus moving the projection *u* off the supporting projection *c* and permitting the lock to drop down and lock the knuckle-tailpiece in place.

In the operation of my device it is only necessary to raise one end of the lock to release the tailpiece of the knuckle, the other end resting on the ledge *f* as a fulcrum, and when so raised a positive rotary movement in a horizontal plane is given the lock by the lever E, so as to cause the end *m* thereof to swing the knuckle into its open position.

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

1. In a car coupling, the combination, with a rotating knuckle, of a lock or latch arranged horizontally in the drawhead and adapted to have one end thereof tilted or raised in a vertical plane to release the knuckle tailpiece and to be rotated horizontally to swing the knuckle into its open position, substantially as described.

2. In a car coupling, the combination, with a rotating knuckle, of a lock arranged within the drawhead and having a recess at one end thereof for the end of the knuckle tailpiece and adapted to be tilted vertically at one end to release the knuckle and to be swung or rotated horizontally to swing the knuckle into its open position, substantially as described.

3. In a car coupling, the combination, with a rotating knuckle, of a horizontally arranged lock or latch having a recess formed therein for the knuckle tailpiece, and means for raising or tilting one end of said lock to release the knuckle and to impart a rotary movement to said lock on a perpendicular axis, whereby the knuckle may be swung outwardly, substantially as described.

4. In a car coupling, the combination, with a rotating knuckle, of a horizontally arranged lock or latch having one end engaging said knuckle and formed with a recess for the knuckle tailpiece, means for raising or tilting one end of said lock and imparting a rotary movement thereto in a horizontal plane, and means for supporting the lock in its raised position, substantially as described.

5. In a car coupling, the combination, with a drawhead having a ledge formed therein, and a rotating knuckle, of a horizontally arranged lock or latch supported at one end on said ledge and having its other end adapted to engage the knuckle tailpiece, means for engaging and tilting one end of said lock or latch and for imparting a rotary movement to said lock or latch, substantially as described.

6. In a car coupling, the combination, with a drawhead having a vertical projection therein, and a rotating knuckle, of a horizontally arranged lock or latch for said knuckle having one end supported above the other within the drawhead, and means for raising

or tilting one end of said lock or latch and imparting a horizontal rotary movement thereto, substantially as described.

7. In a car coupling, the combination, with a rotating knuckle, of a horizontally arranged lock or latch adapted to be raised or tilted at one end and having a downwardly extending lug formed thereon, a rod having a projecting toe adapted to engage and tilt one end of said lock and then to engage said lug to rotate the lock, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES A. HINSON.

Witnesses:
H. E. PARKER,
HARRY S. ROHRER.