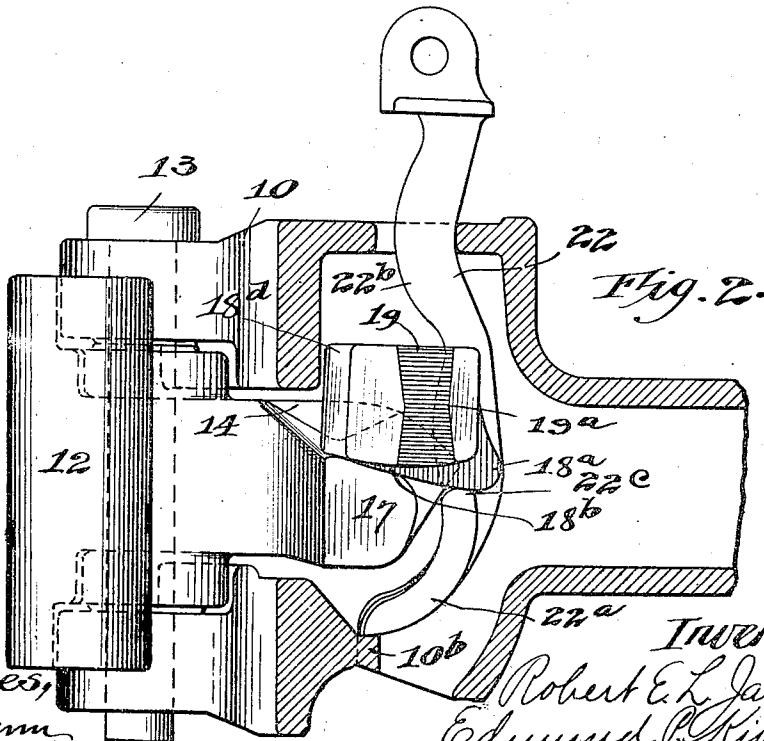
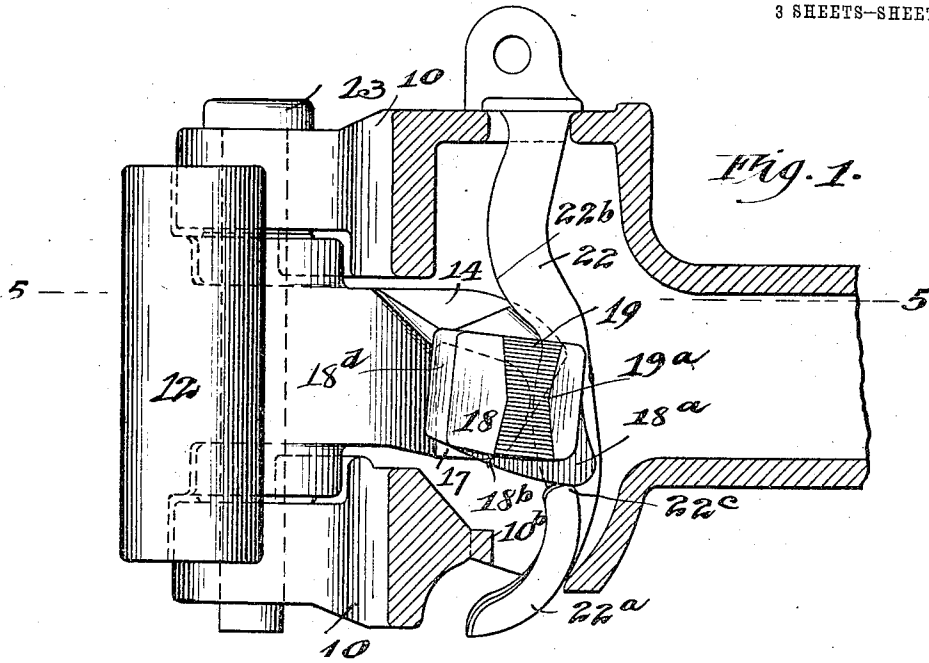


R. E. L. JANNEY & E. P. KINNE.
CAR COUPLING.
APPLICATION FILED JAN. 15, 1909.

991,782.

Patented May 9, 1911.
3 SHEETS—SHEET 1.



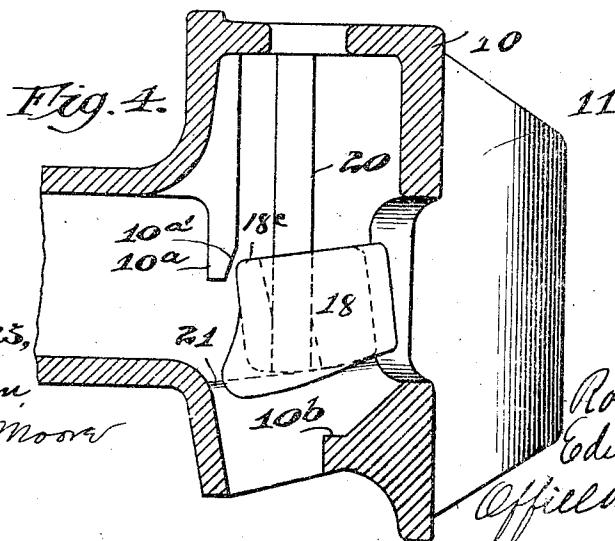
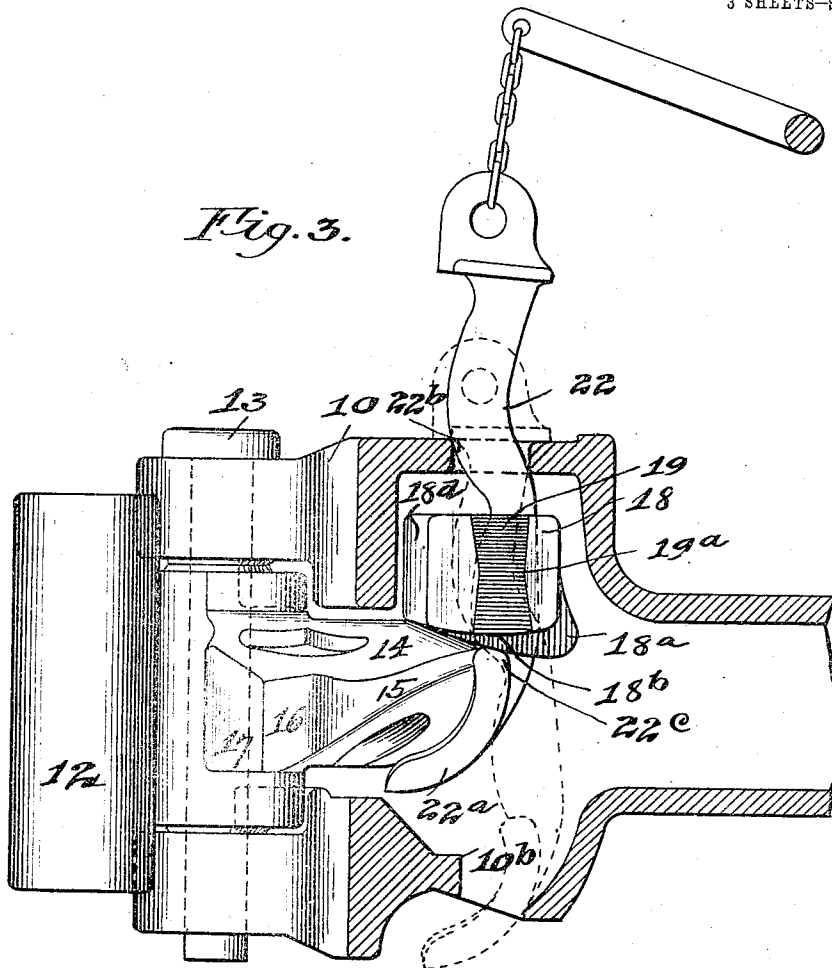
Witnesses,
J. B. Mann,
Allen H. Moore

Inventors
Robert E. L. Janney
Edmund P. Kinne
By Alfred Towle, Attorney

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Witnesses,
S. J. Mann,
Allen H. Moore

Inventors,
Robert E. L. Janney
Edmund P. Kinne
Office of Towle & Hutchinson
Attys

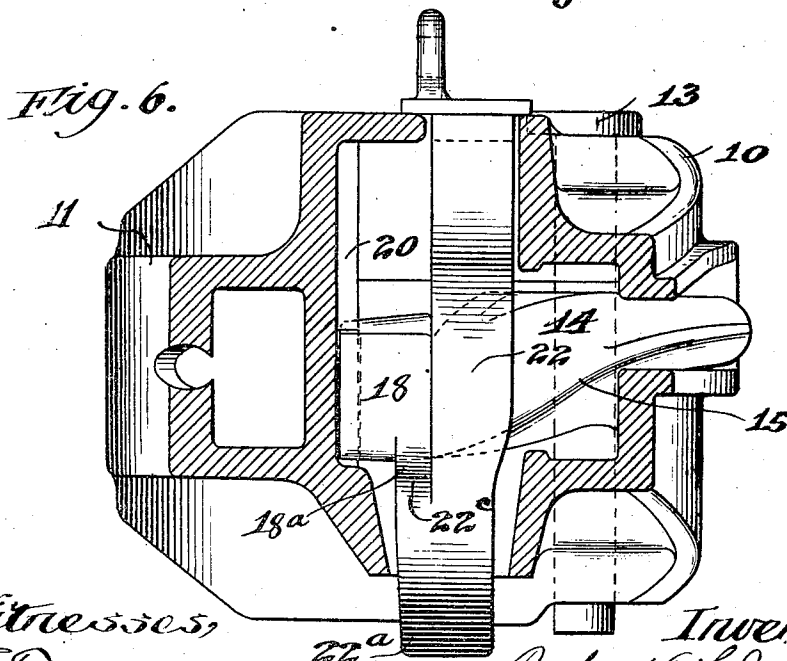
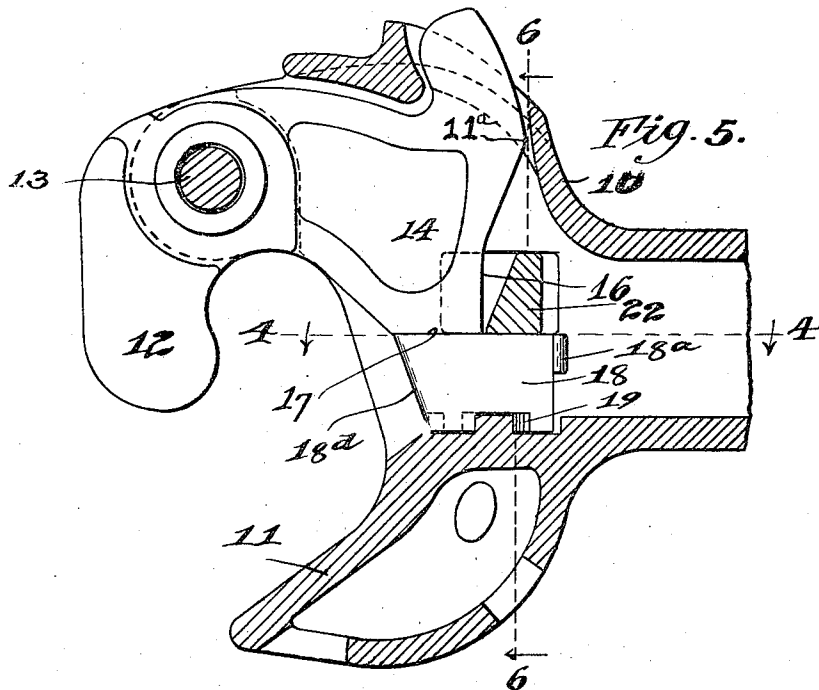
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3 SHEETS—SHEET 3.



Witnesses,
V. D. Mann,
Allen H. Moore

Inventors
Robert E. L. Janney
Edmund P. Kinne
By Offield Toule & Hutchinson
Attys.

UNITED STATES PATENT OFFICE.

ROBERT E. L. JANNEY, OF CHICAGO, ILLINOIS, AND EDMUND P. KINNE, OF ALLIANCE, OHIO, ASSIGNORS TO AMERICAN STEEL FOUNDRIES, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW JERSEY.

CAR-COUPLING.

991,782.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed January 15, 1909. Serial No. 472,492.

To all whom it may concern:

Be it known that we, ROBERT E. L. JANNEY, of Chicago, county of Cook, State of Illinois, and EDMUND P. KINNE, of Alliance, county of Stark, State of Ohio, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

Our invention relates to couplers of the Janney type, which employ a pivoted knuckle and lock therefor, and a lifter for operating the lock.

The general objects of our invention are to provide a coupler which shall have a substantial lock wholly inclosed within the coupler head, said lock being maintained in position to allow the knuckle to be closed without being again lifted and which shall have a strong and substantial means of lifting the lock and opening the knuckle; such lifting and opening means being acted upon by the knuckle only during the opening movement and exposed beyond the normal position only during the act of uncoupling. These we attain in a coupler in which the uncoupling mechanism is adapted to the M. C. B. standard type of chain and clevis. In our construction we employ a lock and a separate lifter and so construct and arrange these parts with reference to each other that when the lifter is disengaged from the lock set by the opening of the knuckle, the lifter will drop to its original position and so remain during the whole movement of the knuckle, while the lock will remain supported on the knuckle tail.

Another feature of our invention relates to the provision of means for preventing the creeping of the lock while under draft. We apply the anti-creeping means to the lock itself, and the lock falling by gravity to its normal position renders such means effective and the lock cannot creep or move toward the released position by any movement of the knuckle, but must be moved to a different position by the lifter before it can be moved toward its unlocking position. These anti-creeping means are functionally independent of the lifter and of the draft.

In the accompanying drawings, Figure 1 is a partial section showing the knuckle

closed and locked and the lifter down. Fig. 2 is a similar view showing the lock released and the lifter seated on the lock set. Fig. 3 is a similar view showing the knuckle open; the lock carried by the tail of the knuckle and the lifter, having performed its function of throwing the knuckle ready to drop to its original position. Fig. 4 is a section on the line 4-4 of Fig. 5, showing the lock in its normal locked position. Fig. 5 is a longitudinal section on the line 5-5 of Fig. 1, and Fig. 6 is a section on the line 6-6 of Fig. 5 looking in the direction indicated by the arrows.

In the drawings 10 is the coupler head provided with the usual guard arm, 11. Pivoted in the head by means of the knuckle pin, 13 is the knuckle, 12. The tail, 14, of the knuckle is of the usual form having a cam surface, 15, on its under side and a cut-away portion, 16, for a purpose hereinafter described. The front end, 17, of the knuckle tail is flattened to form the locking face or portion which contacts with the lock to hold the knuckle in locked position.

The lock or locking block which is shown and described in this application, the anti-creeping means pertaining thereto, and the lifter therefor, form the gist of our invention and we will now describe them in detail.

The lock, 18, is an irregularly shaped block of metal having a slot, 19, upon one face thereof, as shown in Fig. 1. This slot is flared at the top and bottom, the central portion, 19^a, being but slightly larger than the distance across the face of the rib on which the block is guided, the enlargement being made to permit the block to rock, as will be hereafter described. The under portion of the block has a foot or rearwardly extending portion, 18^a, serving as the contacting point for the lifter. The bottom portion, 18^b, of the block proper is preferably formed in the arc of a circle as shown in Fig. 1 and in a general direction parallel with the top of the block in distinction from the foot, 18^a, which widens and extends rearwardly from the bottom of the block. The front, 18^c, of the block may be of any desired form but preferably follows the contour of the knuckle, as shown in Fig. 5.

By referring to Fig. 4, it will be seen that

the interior of the coupler head is provided with a vertical rib, 20, and a diagonal ledge, 21. This vertical rib is provided as a guide for the locking block, 18, in its up-and-down movement. The ledge, 21, acts as a stop to limit the downward travel of the lock and also because of its diagonal position causes the block to tilt rearwardly. Referring to Fig. 4, it will be seen that the lock, 18, when in this normal locked position rests with its upper corner, 18^c, underneath a ledge, 10^a, the lower front edge, 10^{a'}, of which is cut away or beveled. Therefore, any tendency on the part of the knuckle to work the lock up, the movement of course being from the front of the lock, would be opposed by the binding of the slot 19 on the vertical rib 20 and the contacting of the corner, 18^c, thereof with the ledge 10^a.

The combined lifter and lock-set, 22, is so shaped as to lift the lock, open the knuckle and permit lock setting and for this purpose is provided with a foot, 22^a, a forwardly curved portion or enlargement, 22^b, and a side flange, 22^c, on the foot, 22^a, to engage the lock.

The operation as shown in the figures of the drawings may be described as follows: From the locked position shown in Fig. 1, the lifter is raised to the lock set position shown in Fig. 2, where the foot, 22^a, of the lifter rests upon the lock-set ledge, 10^b, of the coupler head. During this movement the side flange, 22^c, of the lifter engages the foot, 18^a, of the locking block and raises the lock, 18, from the front of the locking face, 17, of the knuckle tail. In this movement the lifter first raises the locking block at its rear end, rocking the block on the rib, 20, this rocking being permitted by the form of the slot, 19. The raising of the rear of the block frees it from the anti-creep ledge, 10^a, and it may then continue its upward movement freely. When in the lock-set position the knuckle may be pulled open by the separation of two coupled cars or thrown open by further raising of the lifter. During the opening movement the locking block, 18, is carried by the tail of the knuckle, while the bulge or enlargement, 11^a, upon the knuckle tail, forces the lifter from the lock set position and allows it to drop to its normal closed position. Upon the return of the knuckle to locked position the block will fall by gravity in front of the locking face, 17, resting in the tilted position shown in Fig. 4, with one corner, 18^c, projecting beneath the ledge, 10^a, of the coupler head. If it is desired to throw the knuckle open the movement of the lifter is continued from lock set position until the foot, 22^a, contacts with the cam surface, 15, on the lower portion of the knuckle tail, the opening being

effected thereby. When the knuckle is fully open as shown in Fig. 3, the lifter is released and will drop to its normal unexposed position, the lock meantime being held upon the tail of the knuckle. During the return movement of the lifter its enlargement, 22^b, contacts the enlarged portion 11^a on the rear of the knuckle tail. As will be seen, it is necessary that the rear of the block be first raised by the lifter, in order to release the block from its anti-creep position. The slot 19 in which the block is guided is shown somewhat to the rear of the center of gravity of the block, but this is unnecessary as far as the anti-creeping provision is concerned, as a lifting movement upon the block at its rear end will always lift the rear portion first, rocking the block on its vertical guide as is provided for by the widening of the top and bottom of the groove in the said lock.

It will be observed that the lock has two distinct functional movements, *i. e.*, a tilting movement whereby it is released from the anti-creeping engagement and second a vertical movement whereby it is freed from contact with the knuckle; further that the lock is wholly detached from the lifter and is not pivoted to the coupler head nor does it have any rocking movement except to the slight extent necessary to free it from the anti-creeping ledge 10^a while its release movement is wholly vertical. This lock is entirely within and at all times protected by the head and has no fragile parts that are likely to be broken or injured in service and being disconnected from the lifter it transmits no shocks thereto under coupling and buffing strains.

The exact forms of the lock and its associated parts are not essential in the broader aspects of the invention since the lock might be used with anti-creeping, guiding and supporting parts of different form than there shown, thus necessitating a different form in the lock itself. Essentially the lock is one which is characterized first by the capacity to tilt to release it from its anti-creeping ledge and second by the capacity for bodily vertical movement to release it from engagement with the knuckle.

Without therefore limiting our invention to precise structural details, we claim:

1. In a car coupler, the combination with a coupler head having a substantially vertical guide thereon, of a knuckle pivoted to said head, a locking block having a flared slot therein engaging the guide on said coupler head, and a lifter adapted to rock said block on the guide and to then elevate the block in a substantially vertical plane, substantially as described.

2. In a car coupler, the combination with

a coupler head having a substantially vertical guide thereon and an anti-creeping ledge, of a knuckle pivoted to said head, a locking block having a flared slot therein
5 engaging the guide on said coupler head, said block in its locked position being rearwardly inclined below the anti-creeping ledge of said coupler head, and a lifter adapted to first rock said block on the guide
10 thereby disengaging the block from the anti-creeping ledge and to then elevate the block

in a substantially vertical direction, substantially as described.

ROBERT E. L. JANNEY.
EDMUND P. KINNE.

Witnesses to Janney's signature:

C. H. HUGHES,
J. W. DALMAN.

Witnesses to Kinne's signature:

L. C. CARLISLE,
WM. J. GEDDERT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
