

R. E. L. JANNEY.

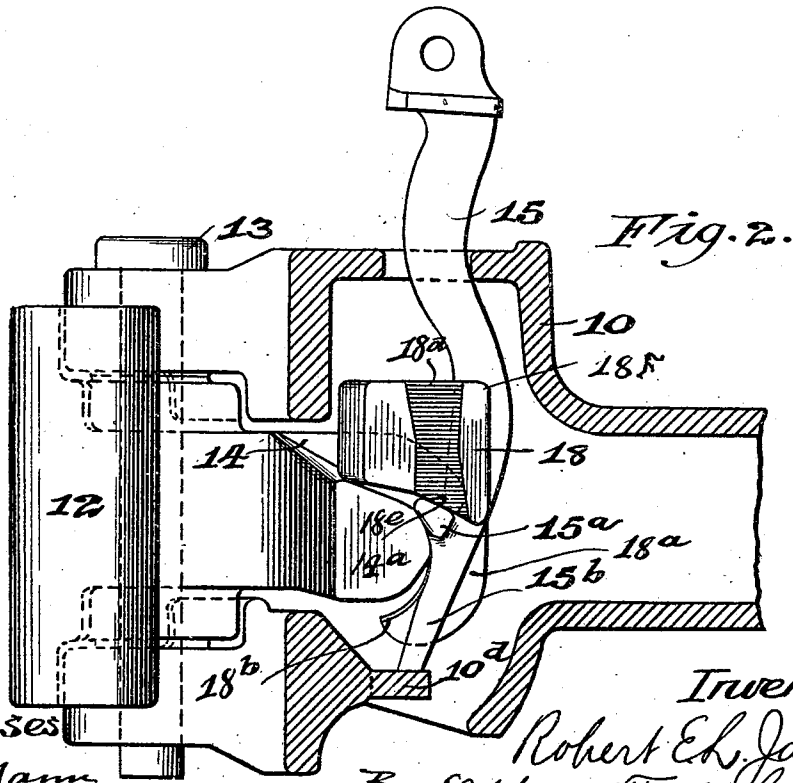
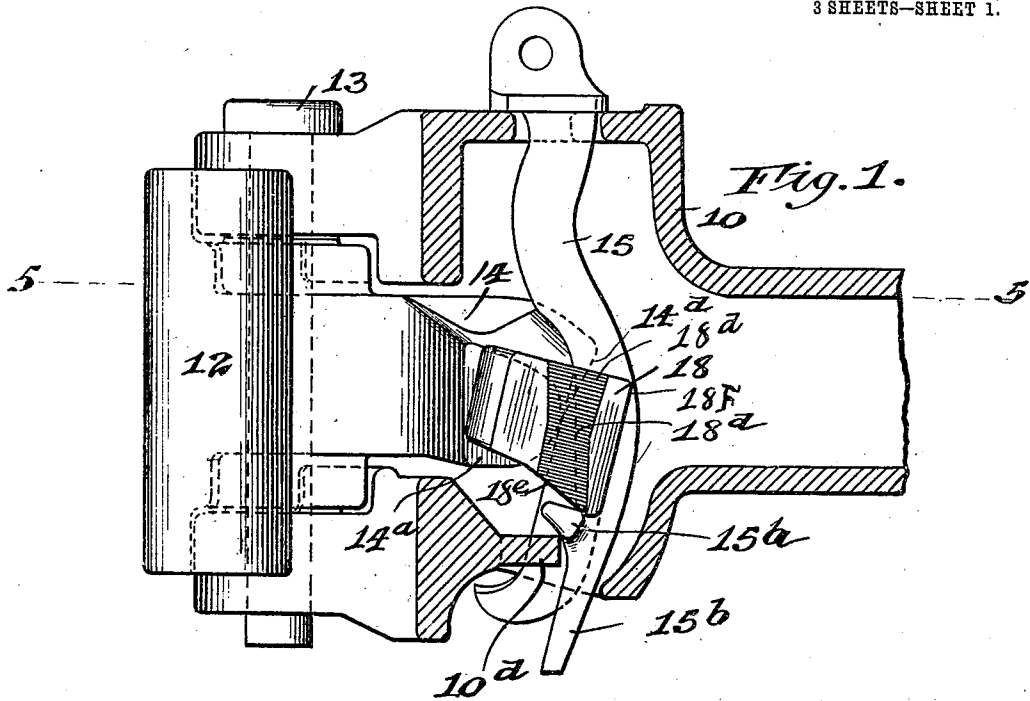
CAR COUPLING.

APPLICATION FILED JAN. 15, 1909.

951,188.

Patented Mar. 8, 1910.

3 SHEETS—SHEET 1.



Witnesses
J. S. Mann
Allen H. Moore

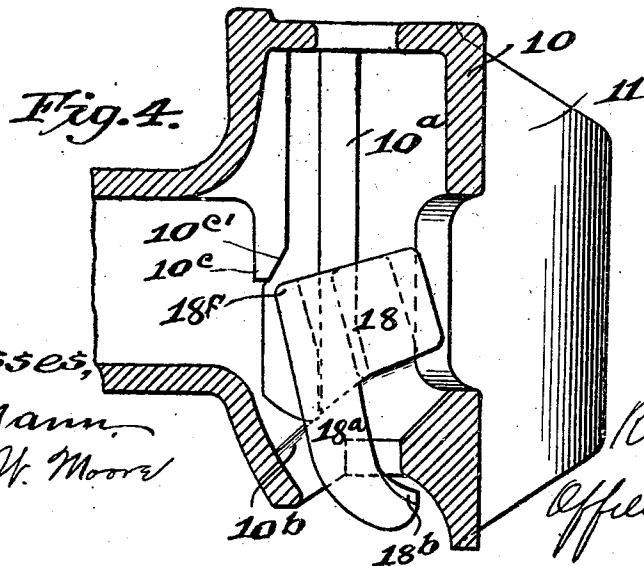
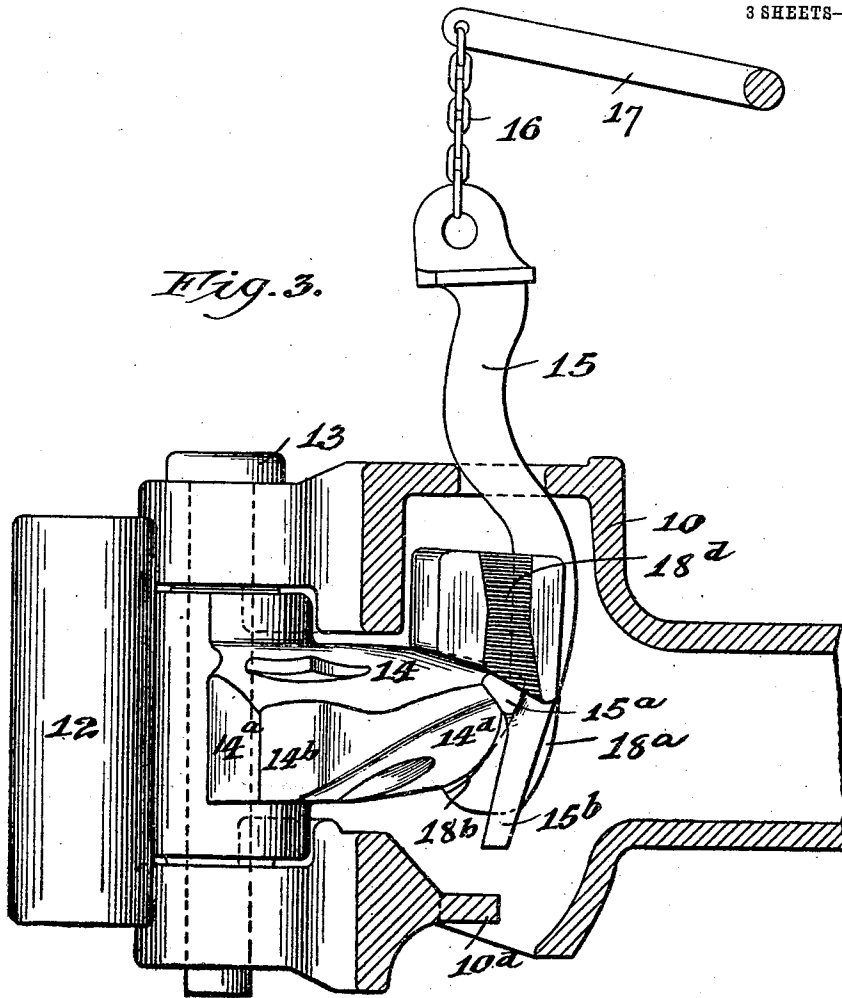
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3 SHEETS—SHEET 2.



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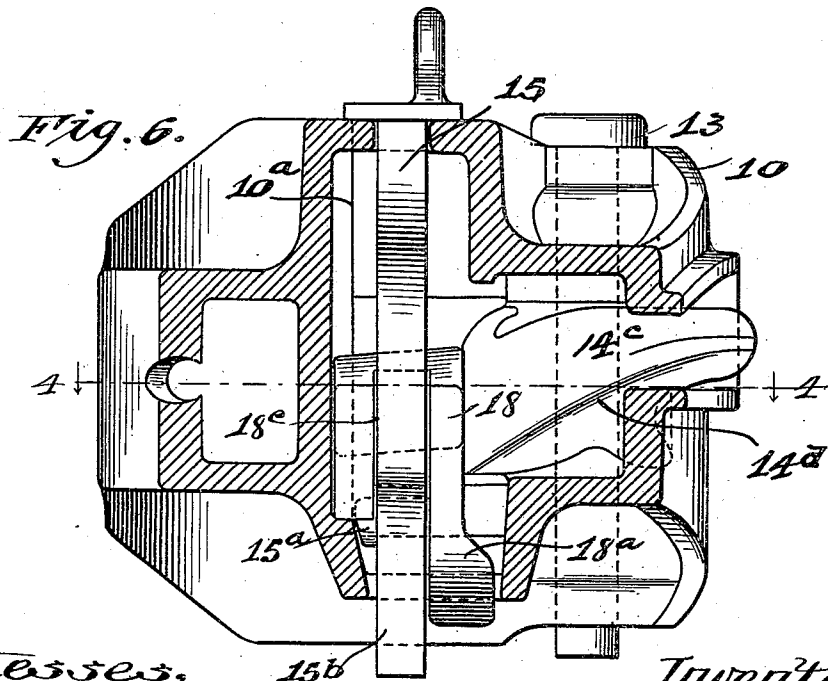
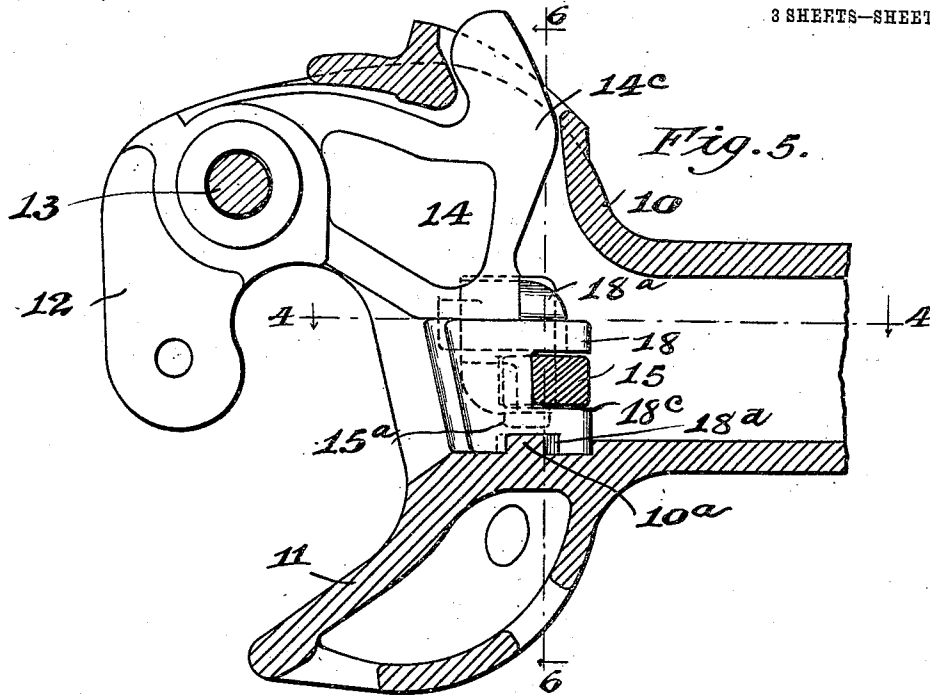
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3 SHEETS—SHEET 3.



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Allen H. Moore

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UNITED STATES PATENT OFFICE.

ROBERT E. L. JANNEY, OF CHICAGO, ILLINOIS, ASSIGNOR TO AMERICAN STEEL
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CAR-COUPLING.

951,188.

Specification of Letters Patent.

Patented Mar. 8, 1910.

Application filed January 15, 1909. Serial No. 472,490.

To all whom it may concern:

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

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

Specifically described, my invention comprises a coupler having a head and pivoted knuckle, a lock, a lifter, and a knuckle opener formed integral with the lock.

It is the general object of my invention therefore to provide a coupler which shall have a strong and substantial lock wholly inclosed within the coupler head, which shall be maintained in position and which shall allow the knuckle to be closed without being again moved and lifted, and which shall have a strong and substantial means for lifting the lock; which shall also be provided with knuckle opening means; such opening means being made a part of the lock. These objects I attain in a coupler in which the uncoupling mechanism is adapted to the M. C. B. coupler standard type of chain and clevis.

In my construction I employ a combined lock and opener, and a separate lifter but so construct and arrange these parts with reference to each other and the tail of the knuckle 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 by the knuckle tail.

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 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.

Referring more particularly to the drawings, 10 is the coupler head provided with the usual guard arm, 11, the knuckle, 12,

and the knuckle pin, 13. The knuckle has a tail, 14, the enlarged or bulged portion, 14^c, and the cam surface, 14^d, upon its lower rear edge. The lifter and lock-set means comprise the part, 15, having the lock carrying ledge, 15^a, and the downwardly and forwardly extending foot, 15^b, the latter providing the lock-set means.

In Fig. 3 is shown the customary chain, 16, and lifter, 17.

The lock and knuckle thrower, 18 which forms the principal feature of my invention, is a block of polygonal form having a downwardly extending and forwardly curved foot, 18^a, the front lower portion, 18^b, of which is formed somewhat at an angle to the face of the extension and affords a cam to assist in throwing the knuckle as shown in Fig. 3. Upon the rear of the lock a slot, 18^c, is formed to receive the lifter, 15, as shown in Fig. 5. Upon the outer side of the lock is another slot, 18^d, the central portion thereof being contracted and the upper and lower portions flared. The bottom of the lock, 18^e, is formed at an angle to the horizontal for the purpose of tilting the lock to prevent creeping and to afford a cam which assists in the lock-setting.

Upon the interior of the coupler head is a vertical rib or guideway, 10^a, and a diagonal ledge, 10^b, the latter forming the support for the lock when the latter is in the locked position of Figs. 1 and 4. Another ledge, 10^c, is provided within the coupler head having a beveled or cut-away lower front edge, 10^{c'}. It will be seen by reference to Figs. 1 and 4 that when in normal locked position the lock is tilted backwardly, the ledge, 10^b, upon which it rests being at an angle to the horizontal, and that in this position the rear upper corner, 18^f, of the lock is beneath the ledge, 10^c, of the coupler head; and consequently movement from the forward end of the lock will be resisted both by the binding of the edges of the slot, 18^d, upon the rib, 10^a, and by the contact of the part, 18^e, with the ledge, 10^c, whereby creeping of the lock is prevented.

The operation is as follows: Assuming the parts to be in the position shown in Fig. 1, which is the normal position, an upward movement of the lifter, 15, will carry with it the lock and opener, 18, the inclined or cam surface, 18^e, riding upon the ledge, 15^a,

of the lifter and thereby drawing the lifter inward until the foot, 15^a, rests upon the lock-set ledge, 10^a, of the coupler head. The parts will then be in the position shown in Fig. 2, the lifter being on the lock set and the lock being above the locking face, 14^a, of the knuckle tail. If the knuckle is then pulled open by a previously coupled car moving away, the lock will ride on the tail of the knuckle and the enlargement, 14^c, of the knuckle tail will contact the ledge, 15^a, of the lifter, thus forcing the lifter from the lock-set and permitting it to drop to normal unexposed position. Upon the return of the knuckle to locked position, the locking block, 18, will fall by gravity to the position shown in Fig. 1. The initial movement of the lifter lifts the rear portion of the lock rocking it upon the vertical rib, 10^a, and freeing it from the anti-creeping ledge, 10^c, to permit its upward movement. If it be desired to throw the knuckle open by means of the lifter, the operator continues the lifting movement and the depending foot, 18^a, of the lock contacts the cam surface, 14^a, upon the tail of the knuckle, thus opening the knuckle. After the opening movement is completed and upon the release of the lifter, it will fall by gravity to the normal unexposed position of Fig. 1, the lock and opener meantime being supported by the tail of the knuckle.

There are advantages in combining the opener and lock. First, the lock has necessarily a substantial body of metal in order to resist the draft on the knuckle, while the lifter does not necessarily have any greater strength than is required to lift the weight of the lock unless it also carries the opener. When the opener and lifter are made in one piece the entire lifter must be made strong because the strain in opening comes upon the lifter below its midlength, the fulcrum being the top wall of the coupler head surrounding the lifter opening. When the opener is formed as a part of the lock, the combined lock and lifter may be made massive so as to avoid danger of breaking and the lifter is applied to the lock itself above the lifter, and the lock and lifter are guided by the rib on the coupler head so that the opening of the knuckle is effected without strain on the movable parts.

Without limiting my invention to the precise structural details, I claim:

1. A lock lifter, having a lock-setting

member and adapted to lift the lock to release the knuckle and to drop back to normal unexposed position when the knuckle is open, substantially as described.

2. The combination with a coupler head having a vertical guide rib and an inclined ledge or seat of a combined lock and knuckle opener.

3. In a coupler a coupler head and a pivoted knuckle therefor, in combination with an integral lock and knuckle opener and a combined lifter and lockset for lifting said lock and opener, and locksetting the same.

4. A coupler of the class described, comprising a head and a pivoted knuckle, in combination with an integral lock and opener, anti-creeping means applied directly to said lock and opener, and a combined lifter and lockset for lifting said lock and opener and locksetting said lock.

5. A coupler of the class described, comprising a head having a pivoted knuckle therein, in combination with a combined lock and knuckle opener guided upon a rib within said head, anti-creeping means applied directly to said lock, and a lifter for said lock and opener.

6. A coupler comprising a head and a pivoted knuckle, in combination with a combined lock and knuckle opener, and a lifter for said lock and opener, said lifter being adapted to return to normal unexposed position after the knuckle is opened, substantially as described.

7. A coupler of the class described comprising a head and a pivoted knuckle therein, in combination with a combined lock and knuckle thrower guided upon a rib within said head, a lifter and lockset, said lifter being adapted to first lift the rear of said lock to free it from its anti-creeping provisions, substantially as described.

8. A coupler of the class described having a head and a knuckle pivoted therein, in combination with a combined lock and knuckle opener adapted for vertical and rocking movement on a rib within said head, a combined lifter and lockset, said lifter being adapted to rock the lock upon said rib to free the lock from its anti-creeping provisions.

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Witnesses:

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