2 Sheets—Sheet 1.

(No Model.)

W. E. SEELEY, Jr. & W. L. HOFFECKER.

CAR COUPLING.

No. 534,350. Patented Feb. 19, 1895.

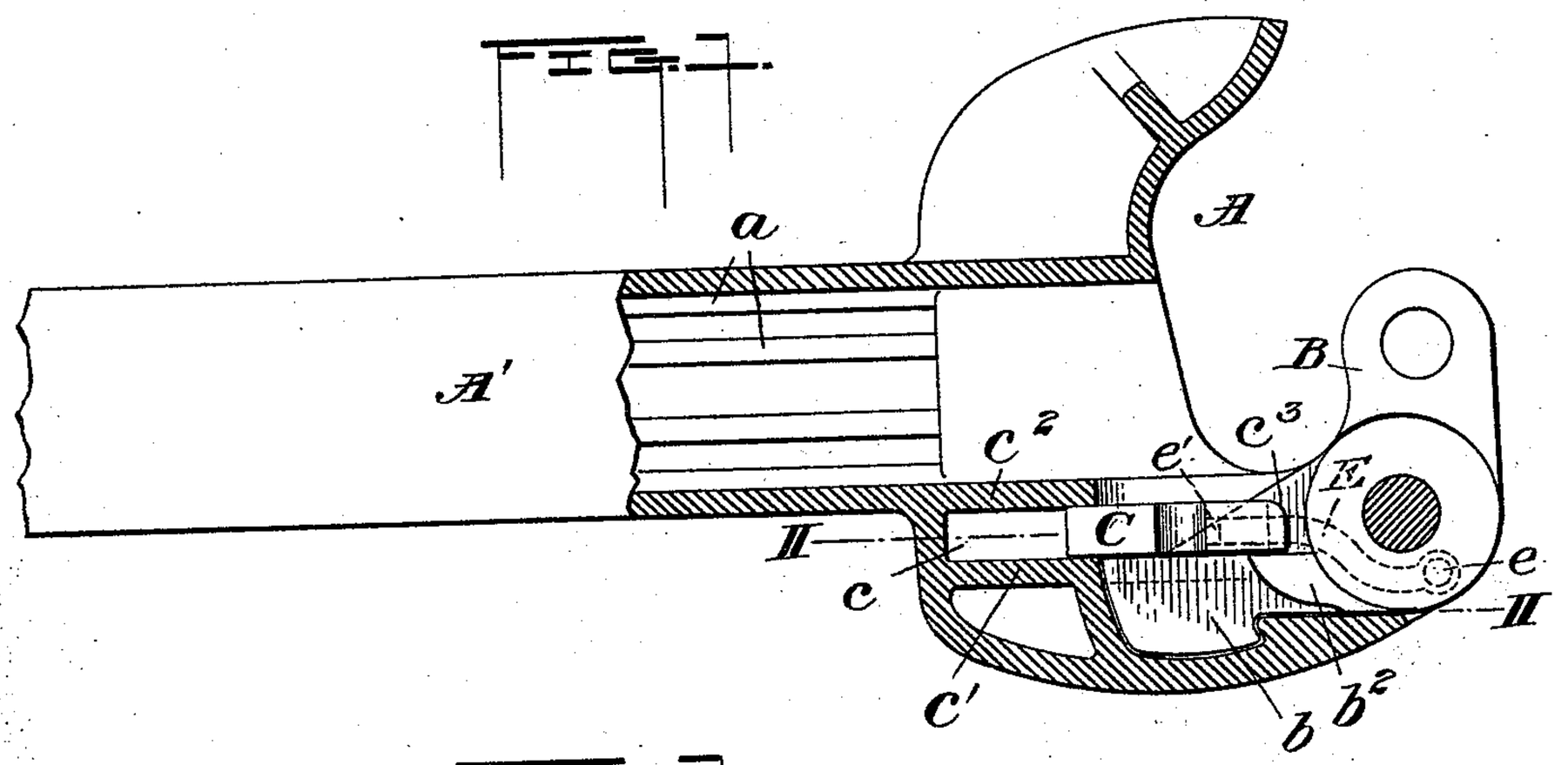


FIG. 2.

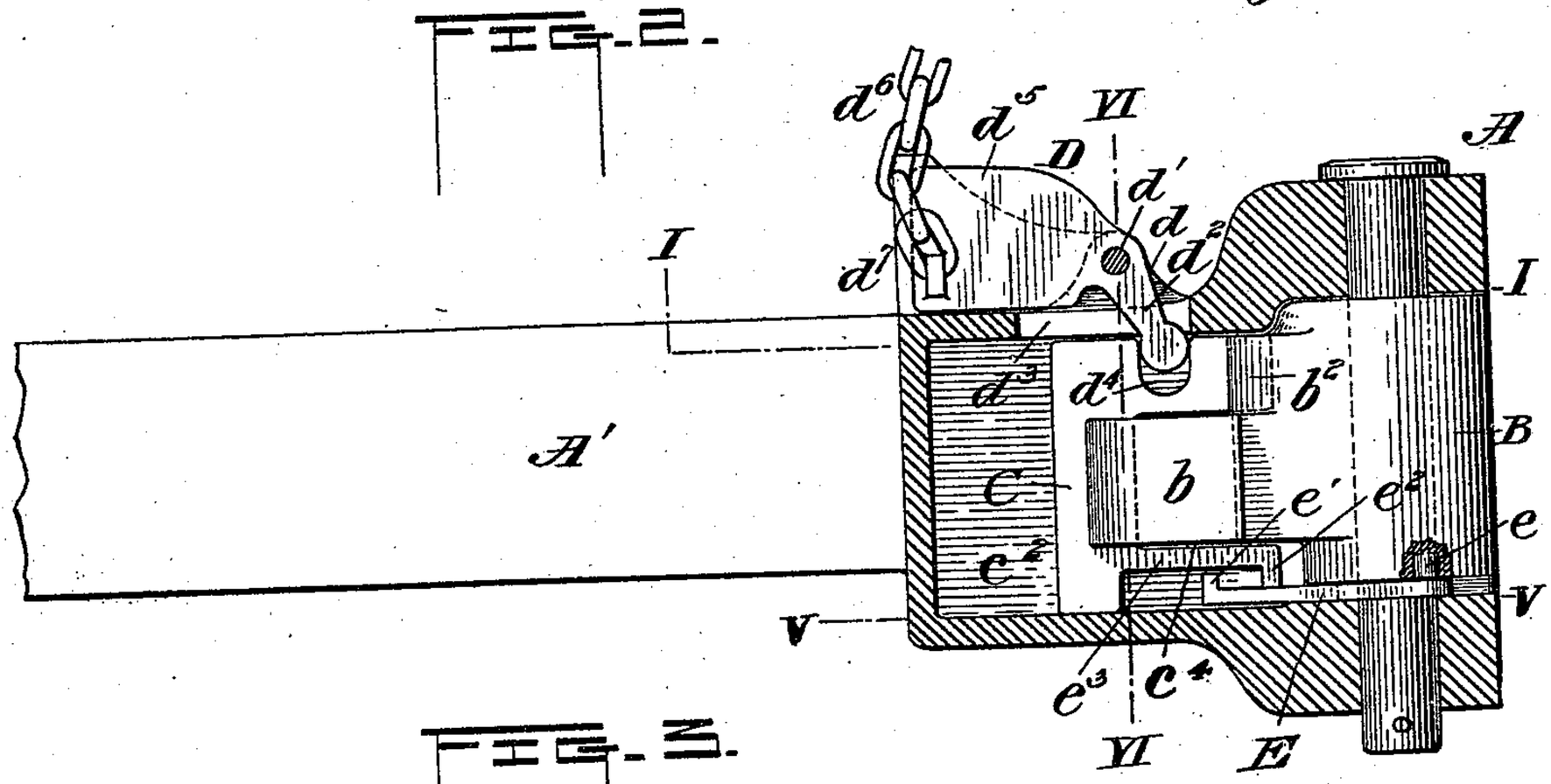
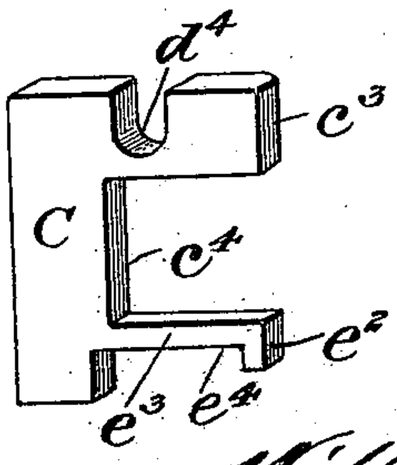


FIG. 3.



Witnesses
T. A. Connell Jr.
Chas. E. Riordon

Inventors
William E. Seeley Jr.
and William L. Hoffecker
By Butterworth & Bowell
their Attorneys

(No Model.) 2 Sheets—Sheet 2.

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FIG. 4.

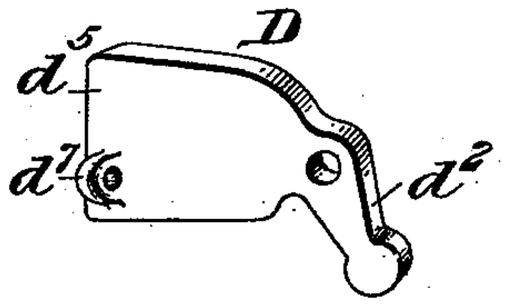


FIG. 5.

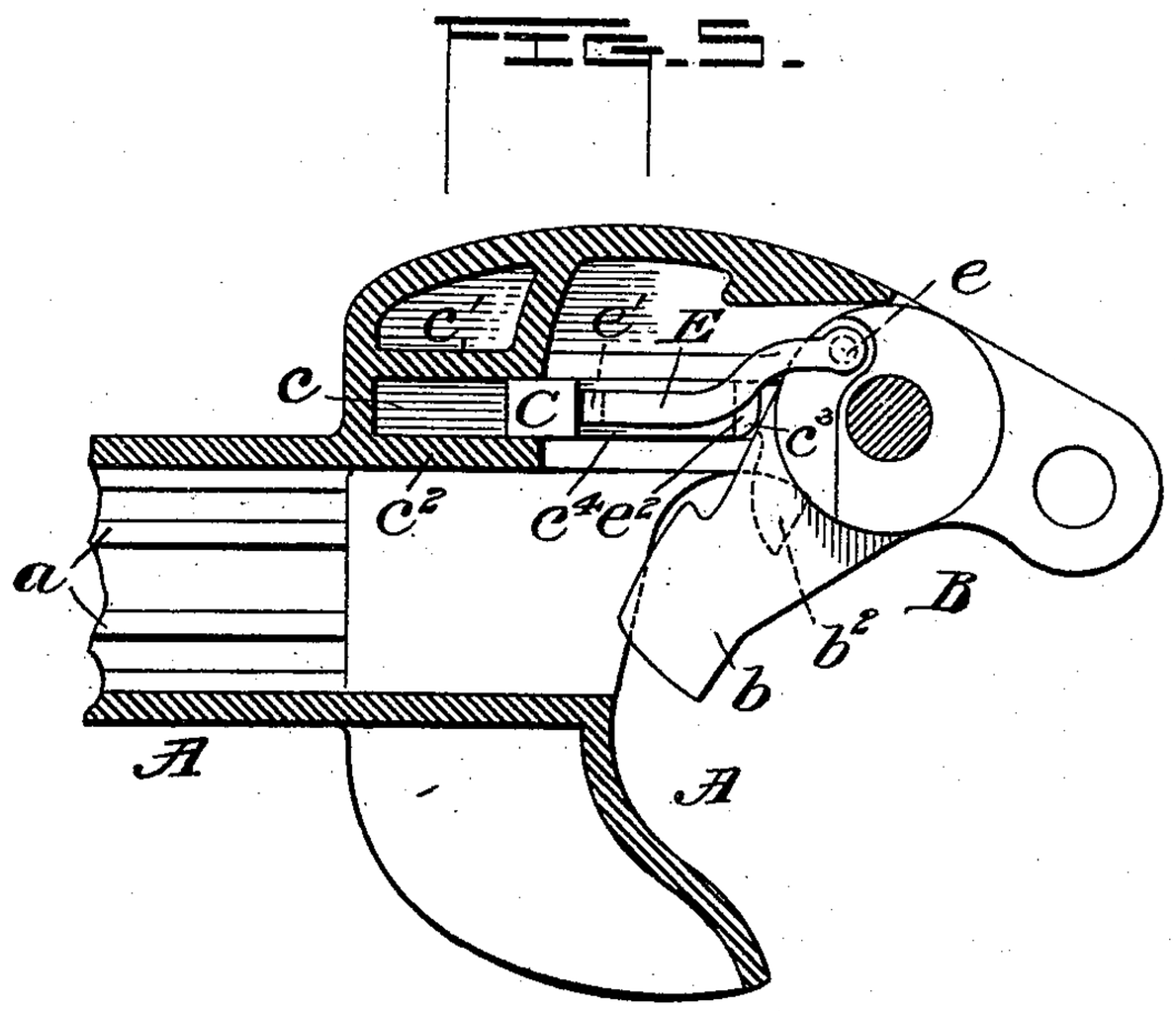
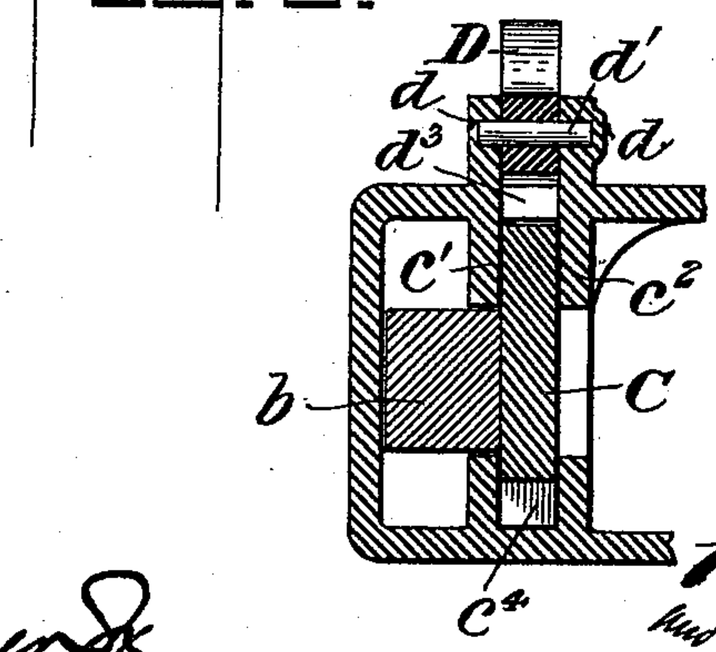


FIG. 6.



Witnesses
C. A. Somers Jr.
Chas. E. Riordon

Inventors
William E. Seeley Jr.
and William L. Hoffecker
By Butterworth & Dowell
their Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM ELMER SEELEY, JR., OF BRIDGEPORT, CONNECTICUT, AND WILLIAM L. HOFFECKER, OF ELIZABETH, NEW JERSEY; SAID HOFFECKER ASSIGNOR OF ONE-SIXTH AND SAID SEELEY ASSIGNOR TO FRANK A. FOX, OF NEW YORK, N. Y.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 534,350, dated February 19, 1895.

Application filed November 26, 1894. Serial No. 529,954. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM ELMER SEELEY, Jr., residing at Bridgeport, in the county of Fairfield and State of Connecticut, and WILLIAM L. HOFFECKER, residing at Elizabeth, in the county of Union and State of New Jersey, citizens of the United States, have invented certain new and useful Improvements in Car-Couplings; and we 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 to car couplings, but more particularly to couplings of the Janney type.

The primary object of our invention is to provide means, whereby the knuckle may be positively thrown in position to be coupled with an opposed coupling simultaneously with the unlocking of said knuckle; to provide means for automatically shifting the knuckle-locking device, so that there shall be less strain and jar of the locking mechanism than usually results from the use of such means as have heretofore been employed; and to provide means for automatically locking the knuckle when the same is forced inwardly.

A further object of the invention is to provide simple, efficient and durable locking and unlocking mechanism which may be applied to various designs of couplers.

With these and other objects in view the invention consists in the construction and combination of the several parts as will be more fully hereinafter described, and then defined in the claims at the end of the description.

Referring to the accompanying drawings forming a part of this specification, Figure 1 is a sectional plan view of the coupler head, the section being taken on the line I—I of Fig. 2. Fig. 2 is a vertical section of the same on the line II—II of Fig. 1, illustrating in elevation the locking and unlocking mechanism. Fig. 3 is a detail perspective view of the knuckle-locking device. Fig. 4 is a detail perspective view of the lever for shifting the knuckle-locking device. Fig. 5 is a bottom sectional view or inverted sectional plan taken on the line V—V of Fig. 2, and Fig. 6 is a transverse section taken on the line VI—VI of Fig. 2.

In the drawings we have shown the invention as applied to a coupler of a preferred form, though it is obvious that the same may be applied to other designs of couplers if so desired. In this form A designates the coupler head having the shank A′ which is preferably square throughout its length and is provided with internal strengthening ribs *a* extending rearwardly from the coupler head. The knuckle B is pivoted to the head in the usual or any preferred manner and has an inner portion or tail-piece *b* arranged at an angle and adapted to fit into a recess of the coupler head in which it may be locked by a sliding block or locking device C.

The sliding block C may be approximately rectangular in form and arranged edgewise in a recess *c* in the coupler head, and is prevented from moving laterally therein by the ribs or webs c', c^2, which form the side walls of said recess. This block is adapted to be moved or shifted rearwardly in the coupler head either positively or automatically, the latter being accomplished by providing a cam or cam surface b^2 on the hub or boss of the knuckle B, preferably located above the tail-piece *b*, and arranged to contact with the forward upper edge c^3 of said block when the knuckle is forced inwardly. This cam extends outwardly from the knuckle sufficiently to throw the block a distance slightly in excess of the surface which contacts with the tail-piece *b* for locking said knuckle, so that the tail-piece may readily pass through a recess c^4 in the forward edge of the block without touching the same. By this means the block or locking device is moved directly by the cam or cam surface on the hub of the knuckle, and not by the end of the tail-piece of the knuckle, as heretofore, which strikes the locking device more or less broadside and with a sudden thrust which jars and strains the locking mechanism.

For positively moving the block C we pro-

vide an angular lever D which may be pivoted to suitable lugs or projections d on the upper surface of the coupler by the pintle d' which is preferably arranged in apertures in said lugs in such manner as to prevent the same from working loose, as best shown in Fig. 6. This lever D has an arm d^2 which passes through an elongated slot d^3 in the coupler head, the lower end of said arm being preferably rounded to enter a recess d^4 in the block C, which recess is of sufficient depth to permit the proper movement of the end of said arm. The outer arm d^5 of the lever D is of sufficient weight to automatically throw the block forward so as to lock the knuckle after the same has been raised, and has a link or chain d^6 connected thereto by an eye d^7, or otherwise, by which the lever D may be tilted on its pivot to unlock the knuckle; the said chain being operated or raised in any desired manner.

To place the knuckle B in coupling position simultaneously with the unlocking of said knuckle, we provide a lever E which may have on one of its ends a pin or projection e engaging an aperture in a recessed portion of the boss of the knuckle, while the other end has a lug or projection e' which extends upwardly and is engaged by the downwardly projecting end or projection e^2 of the arm e^3, the latter being located between the recess c^4 and the recess e^4; the said recess c^4 permitting free play or movement of the block within certain limits. The play or lost motion of the arm e^3 of the block, without engaging the lever E, is sufficient to permit the block to be moved rearwardly to disengage the contacting surfaces of said block and the tail-piece of the knuckle, and is equivalent to the throw of the cam b^2; otherwise the knuckle might be moved outwardly, thereby preventing the proper working of the locking mechanism.

The operation of the locking and unlocking mechanism will be readily understood from the foregoing description. It will be seen should the coupler be in the position shown in Fig. 5, that by forcing the knuckle inwardly, the cam b^2 will engage the edge c^3 of the locking block C, thereby forcing the same rearwardly a sufficient distance to permit the tail-piece b of the knuckle to pass through the recess c^4 of said block. At this time the lever D, which will have been raised by the movement of the block, will, by the weight of the end d^5 of said lever, cause said block to move forward, thereby locking the tail-piece of the knuckle in the recess of the coupler-head.

Should it be desired to unlock the knuckle, the lever D is tilted on its pivot, which, through the arm d^2 of said lever will throw the block rearwardly. When said block has moved a sufficient distance to be disengaged from the tail-piece b, the end e^2 of the arm E^3 will engage the end e' of the lever E and cause the knuckle to be swung on its pivot and be positively thrown in coupling position. By releasing the lever D the block will again return to the position shown in Fig. 5, when the operation may be repeated.

We do not wish to be confined to the exact construction and arrangement of parts shown as the same may be varied without departing from the spirit of our invention. For instance, the lever D may engage a projection on the sliding block; or the end e^2 of the arm E^3 might engage a slot in the lever E, or the end e' of said lever engage a slot in the block.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, with a coupler-head and an angular knuckle pivotally connected thereto, of a locking device adapted to engage and lock the knuckle, and a cam arranged near the axis of rotation of said knuckle adapted to contact directly with the aforesaid locking device and move the same out of the path of the tail-piece of said knuckle when said tail-piece is moving inward, substantially as described.

2. In a car coupling, the combination with a coupler-head and a knuckle having a tail-piece pivotally connected thereto, of a locking block slidingly held in the coupler-head and adapted to permit the passage of the tail-piece, and a cam on said knuckle near the axis of rotation thereof adapted to contact with the forward edge of said block, together with means for automatically restoring the block to locking position, substantially as described.

3. The combination with a coupler-head and an angular knuckle pivotally connected thereto, of a longitudinally-slidable locking block arranged in the coupler-head, means for operating said block, and an arm extending from the block integral therewith having a lost-motion connection with a rotating element of said knuckle whereby the latter is simultaneously opened and unlocked, substantially as described.

4. The combination with a coupler-head and a knuckle pivotally connected thereto, of a longitudinally slidable locking block arranged in the coupler-head having a projecting arm, means for operating said block by the rotation of the knuckle, and a lever pivoted to the knuckle and having a lost-motion connection with the aforesaid arm of said block whereby the knuckle may be simultaneously opened and unlocked, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM ELMER SEELEY, JR.
WILLIAM L. HOFFECKER.

Witnesses:
FRANK. A. FOX,
M. E. COHEN.