

(No Model.)

2 Sheets—Sheet 1.

W. McCONWAY, W. KELSO & F. J. CURTIS.
CAR COUPLING.

No. 546,783.

Patented Sept. 24, 1895.

FIG. 1.

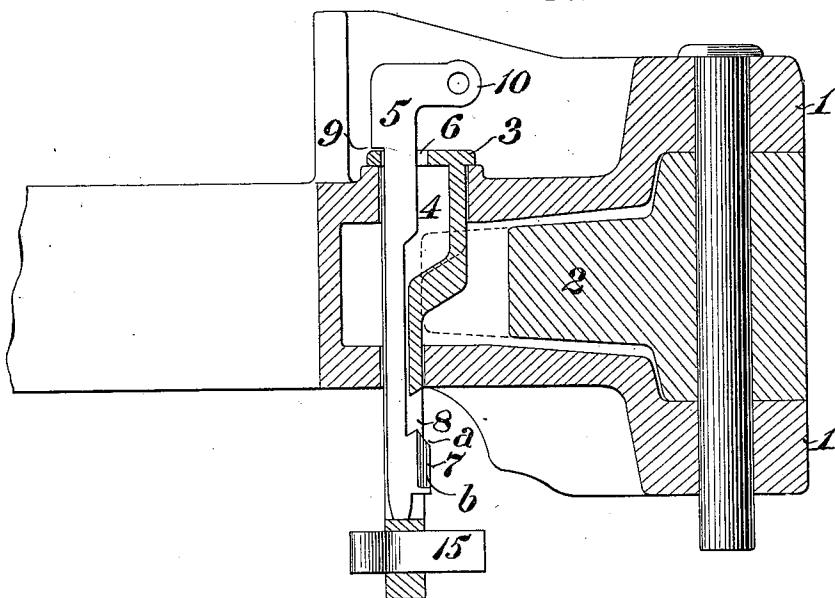


FIG. 2.

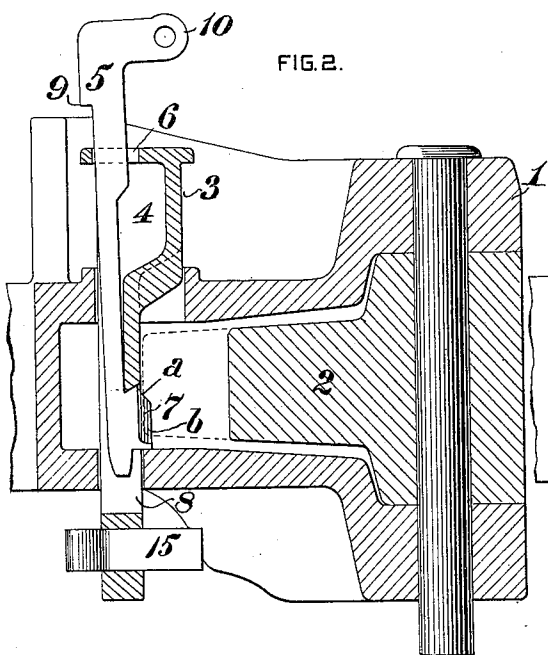
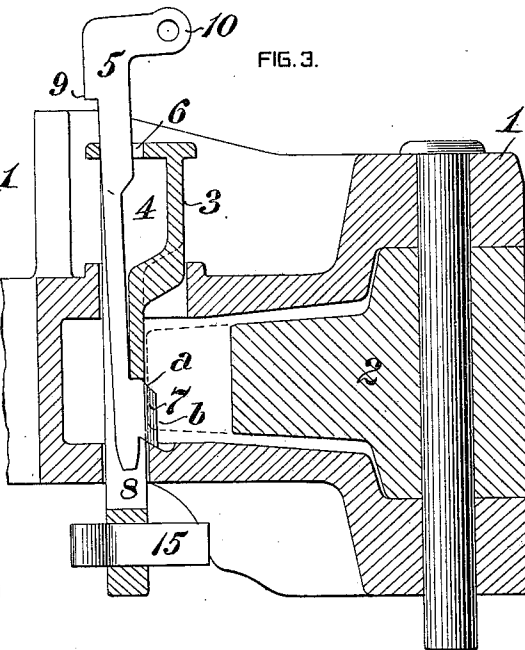


FIG. 3.



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FIG. 4.

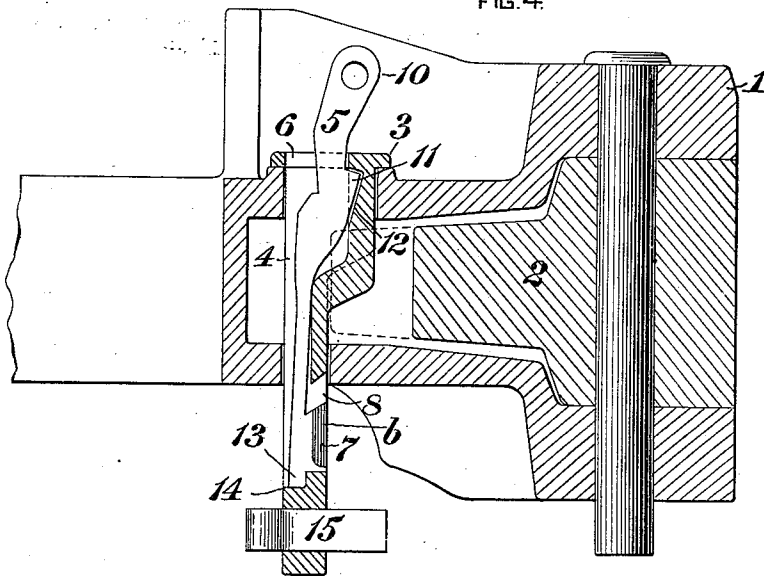
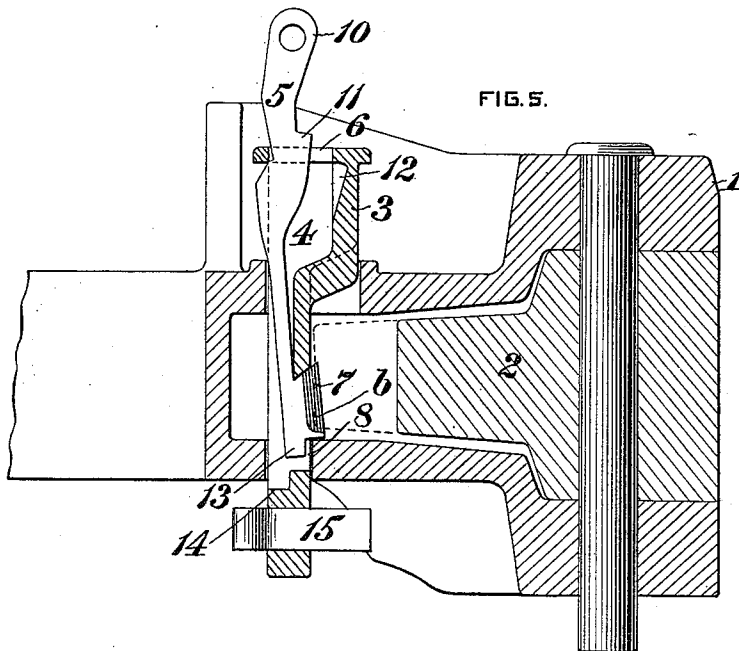


FIG. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM McCONWAY, WILLIAM KELSO, AND FRANK J. CURTIS, OF PITTSBURG, PENNSYLVANIA, ASSIGNORS TO THE McCONWAY & TORLEY COMPANY, OF SAME PLACE.

CAR-COUPLING

SPECIFICATION forming part of Letters Patent No. 546,783, dated September 24, 1895.

Application filed April 25, 1895. Serial No. 547,077. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM McCONWAY, WILLIAM KELSO, and FRANK J. CURTIS, citizens of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Car-Couplers, of which improvements the following is a specification.

The invention described herein relates to certain improvements in mechanism for so supporting the locking block or pin in unlocking position as to be capable of being shifted by the swinging knuckle when turned to open or closed position, thereby permitting of the automatic movement of the locking-block.

The invention has for its object a construction and arrangement of such mechanism as will permit of a certain range of independent movement of either the supporting device or locking block or pin; and it is a further object of the invention to so construct such supporting mechanism as to be operative when shifted to raise the locking block or pin to unlocking position.

In the accompanying drawings, forming a part of this specification, Figure 1 is a sectional elevation of a coupler having the improvement applied thereto, the locking-block and the supporting device being shown down. Fig. 2 is a similar view, the locking block or pin being supported in unlocking position. Fig. 3 is a view similar to Fig. 2, illustrating a modification in the lock for holding the supporting device in operative position. Figs. 4 and 5 are sectional elevations similar to Figs. 1 and 2, illustrating certain modifications in the construction of the supporting device.

In the practice of the invention the coupler, which is of the Janney or swinging-hook type, has its head 1 and swinging hook or knuckle 2 constructed in the usual or any suitable manner. The locking block or pin 3, which is of the usual or any suitable construction, is provided with a longitudinal recess 4 for the reception of the stem 5, which projects through a slot 6 in the head of the

block or pin, and is provided at or near its lower end with a catch adapted to engage a portion of the coupler-head and support the block or pin 3 in unlocking position. In the construction shown in Figs. 1, 2, 3, 4, and 5 this catch is made in the form of a lug or ear 7, projecting from one side of the stem 5. Normally this ear or lug lies within a slot 8, formed through the locking-pin at the lower end of the recess 4, but will project beyond the face of the block or pin when the stem is shifted, as hereinafter described. The stem is supported in normal position—i. e., with its ear or lug wholly within the slot 8—by a shoulder 9 near its upper end resting on the head of the locking block or pin, as shown in Fig. 1. On the part of the stem above the locking block or pin and on the same side as the ear or lug 7 is formed an arm 10, to which is attached the clevis or chain or other device employed for raising the locking block or pin.

As shown in Figs. 1, 2, and 3, the slot 8 is made of such a length as to permit of a movement of the stem independent of the locking block or pin. In practice this slot is preferably made approximately twice as long as the ear or lug 7, which projects into the slot. It results from this construction that when the locking block or pin is raised by the tail of the knuckle when swung to closed position the stem will not be raised sufficiently far to permit of the lower end of ear or lug passing out of the slot 8; or, in other words, the pin or block can be raised to unlocking position by the tail of the knuckle without bringing the ear or lug on the stem into operative position. When the stem is raised by the chain attached to the arm 10, the lower end of the stem will be shifted laterally, so as to cause the ear or lug to project out of the slot 8, and as the stem moves up the upper end of the ear or lug will strike against the end of the slot 8, so that during its further upward movement the stem will carry the locking block or pin with it. As the opening in the bottom of the coupler-head is made only enough larger than the pin to permit of the free movement of the latter, provision is made for pushing the ear

or lug back into its slot 8 sufficiently to permit of the movement of the ear or lug into the coupler. This temporary inward movement may be effected in any suitable manner—as, for example, by forming on the upper end of the ear or lug an incline or bevel *a*, which, by striking against the edge of the opening in the bottom of the coupler-head, will push the ear or lug back into the slot; but by reason of the direction of pull of the lifting-chain on the stem the latter will be shifted, so as to cause the ear or lug to project out of the slot again as soon as it has been raised to such a height that its lower end has passed out of the opening in the bottom of the coupler-head. The lower end of the projecting ear or lug will now rest upon the bottom of the coupler-head, and the locking block or pin, which has reached unlocking position, will rest upon the upper end of the ear or lug.

In order to prevent the accidental displacement of the ear or lug, a notch is formed in its upper end back of the incline *a* for the reception of the V-shaped edge of the wall at the upper end of the slot 8, as shown in Figs. 1 and 2, or a notch may be formed in the lower end of the ear or lug for the reception of a shoulder on the bottom of the coupler-head, as shown in Fig. 3.

In the construction shown in Figs. 4 and 5 the stem 5 is provided with a shoulder 11, on the same side as the ear or lug 7, for engagement with a recess 12 in the locking block or pin, and the slot 6 in the head of the latter is elongated, so as to permit of a sufficient backward movement of the stem 8 to disengage the shoulder 11 from the recess 12, as shown in Fig. 5. In this construction the stem is provided below the ear or lug 7 with a projection 13, adapted to engage a shoulder 14 on the locking block or pin and prevent any lateral movement of the stem and its ear or lug until the shoulder 11 has been withdrawn from the recess 12 and the stem moved along the pin a short distance. In this construction the locking block or pin is carried up by the shoulder 11 until the cotter-pin or other stop 15 at the lower end of the block strikes against the coupler-head and checks a further movement of the block or pin. The continued pull on the stem will withdraw the shoulder 11 from the recess 12, thereby permitting such upward movement of the stem as will raise the projection 13 clear of the shoulder 14, when the lower end of the stem is shifted laterally by reason of the direction of pull on its upper end. This lateral movement of the lower end of the stem moves the ear or lug 7 out of its slot 8 over the bottom of the coupler-head, as shown in Fig. 5. The engagement of the projection 13 with the shoulder 14 will prevent any outward movement of the ear or lug, except when the stem is unlocked from the locking block or pin and moved independently

thereof by the lifting-chain in the manner described. Hence as long as the stem is raised by the locking-block it will not be held in unlocking position. The front edge of the catch, which, when in operative position, projects in the path of movement of the tail of the knuckle, is beveled, as at *b*, so that the tail will pass by the catch and in passing by will push the catch back into the slot 8, thereby permitting the locking block or pin to drop to locking position.

It is characteristic of this improvement that when the locking block or pin is raised by the tail of the knuckle when shifted to closed position the catch will not be brought to operative position; but when the locking block or pin is raised by the stem 5 the latter is given a movement independent of the block or pin sufficient to bring the catch to such a position that it will be free to be shifted to operative position as soon as it has passed through the opening in the bottom of the coupler-head.

We claim herein as our invention—

1. In a car coupler having a swinging hook locked and unlocked through the tail piece, a vertically and longitudinally movable locking block or pin grooved longitudinally for the reception of an operating stem and recessed for the projection therethrough of a catch made on the stem, in combination with a stem and catch whereon the locking block may move freely a distance sufficient for the independent lifting of the locking block by the tail piece of the knuckle, substantially as described.

2. In a car coupler having a swinging hook locked and unlocked through the tail piece, a vertically and longitudinally movable locking block or pin grooved longitudinally for the reception of an operating stem and recessed for the projection therethrough of a catch made on the stem, in combination with a stem and catch whereon the locking block may move freely a distance sufficient for the independent lifting of the locking block by the tail piece of the knuckle, and, also, having an oscillatory movement whereby the catch will be projected into the path of the swinging tail piece and engage some fixed portion of the draw head, substantially as set forth.

3. The combination of a coupler head and pivoted knuckle or swinging hook, a block or pin for locking the hook in a closed position, a stem mounted on the block or pin and adapted to raise the latter to unlocking position, a catch adapted to be shifted by the stem into engagement with the pin and some portion of the coupler, thereby supporting the block or pin in unlocking position, and a lock for holding the catch as against accidental displacement from such operative position, substantially as set forth.

4. The combination of a slotted locking

block a stem having a limited range of movement therein, and a catch projecting from the stem through a slot or recess in the locking block or pin, and constructed to have a V-shaped engagement with a portion of the coupler with reference to holding the catch in unlocking position as against accidental displacement, substantially as set forth.

In testimony whereof we have hereunto set our hands.

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Witnesses:

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