

No. 737,772.

PATENTED SEPT. 1, 1903.

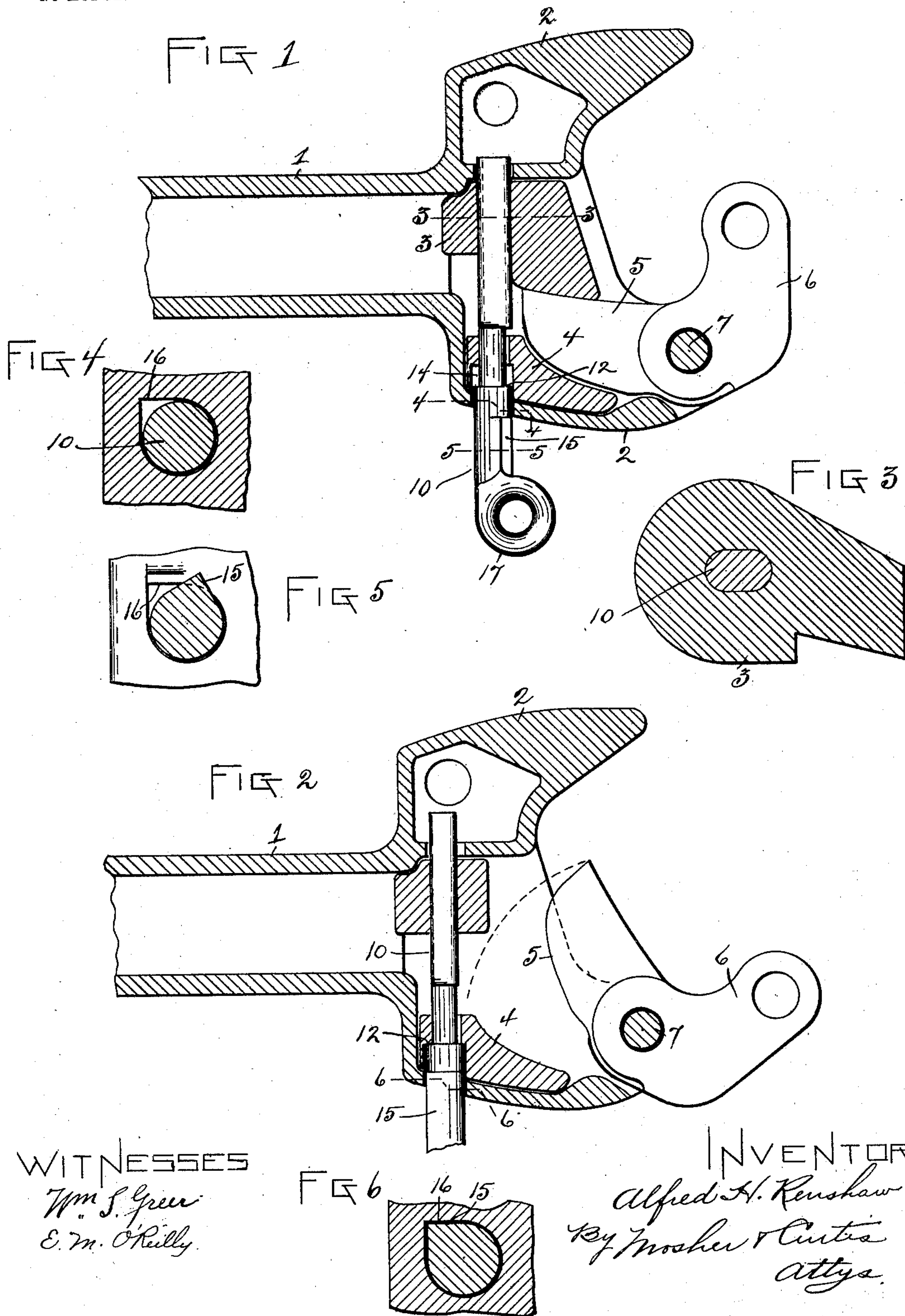
A. H. RENSHAW.

CAR COUPLING.

APPLICATION FILED JAN. 19, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES

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2 SHEETS—SHEET 2.

FIG 7

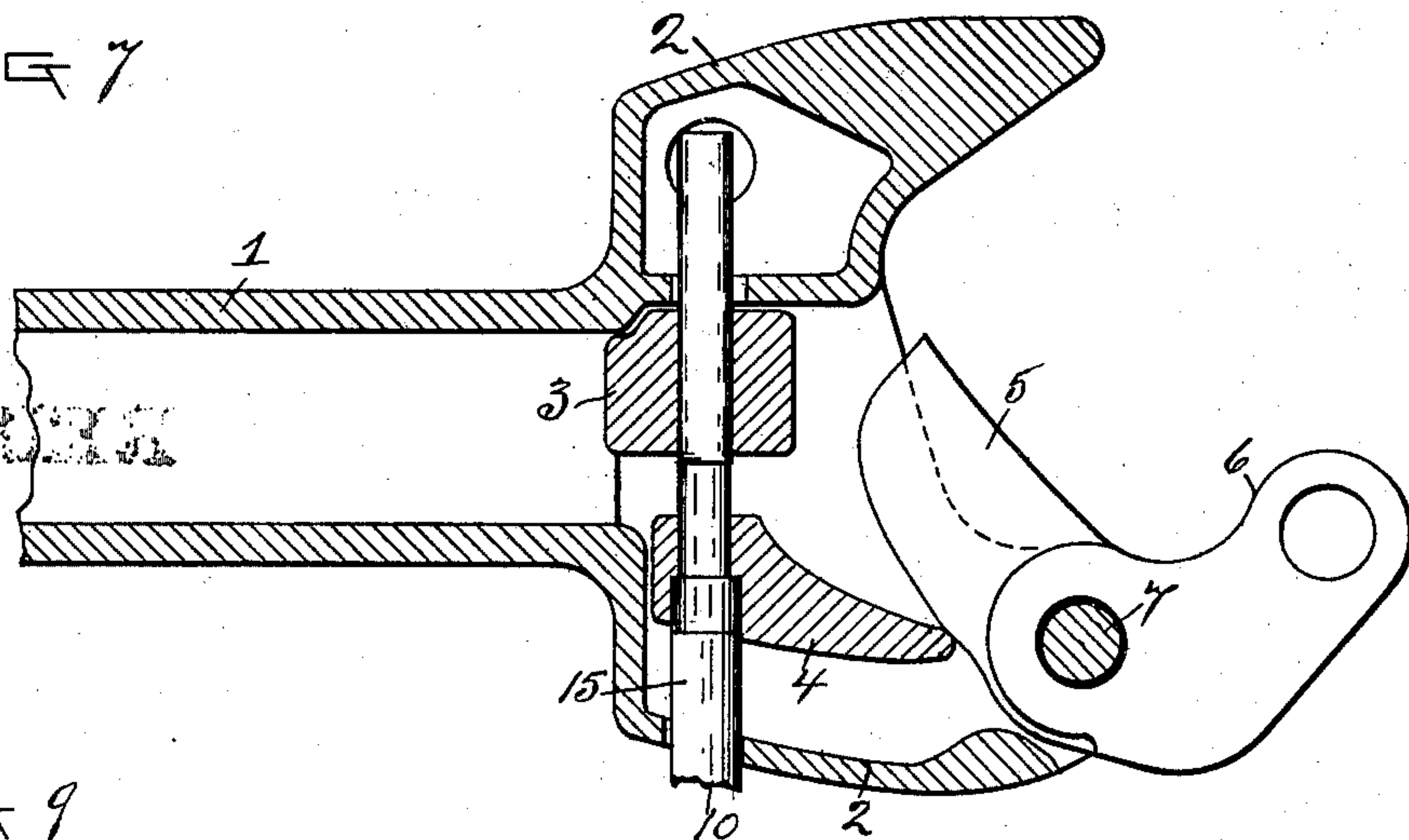


FIG 9

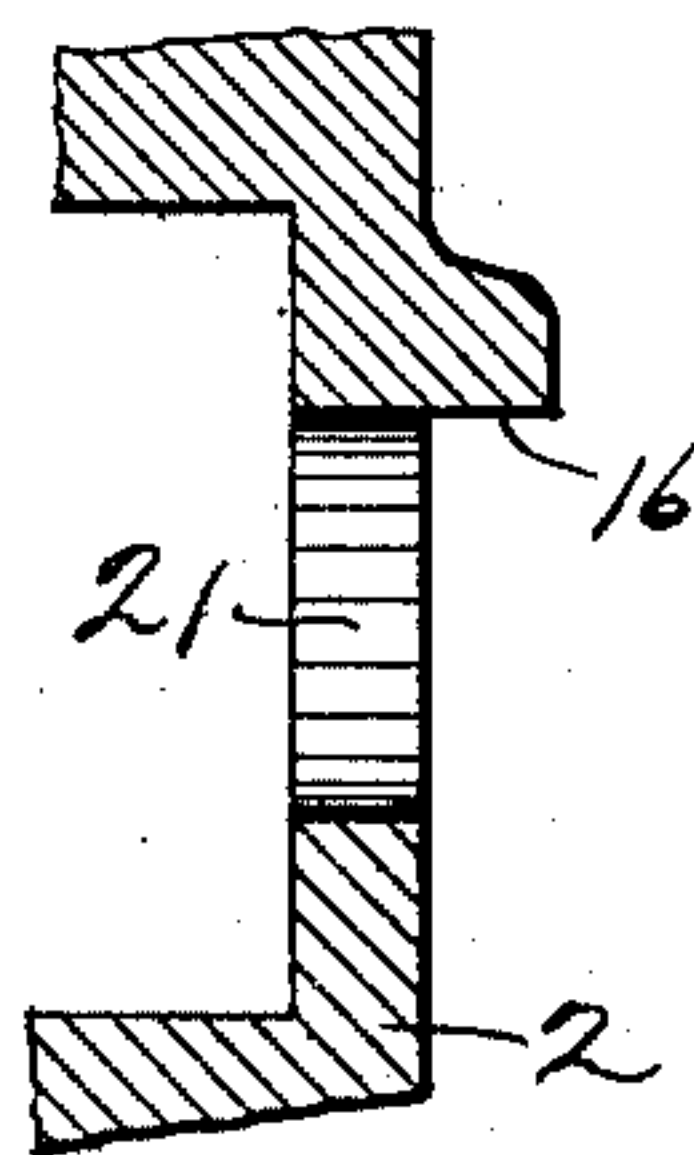


FIG 8

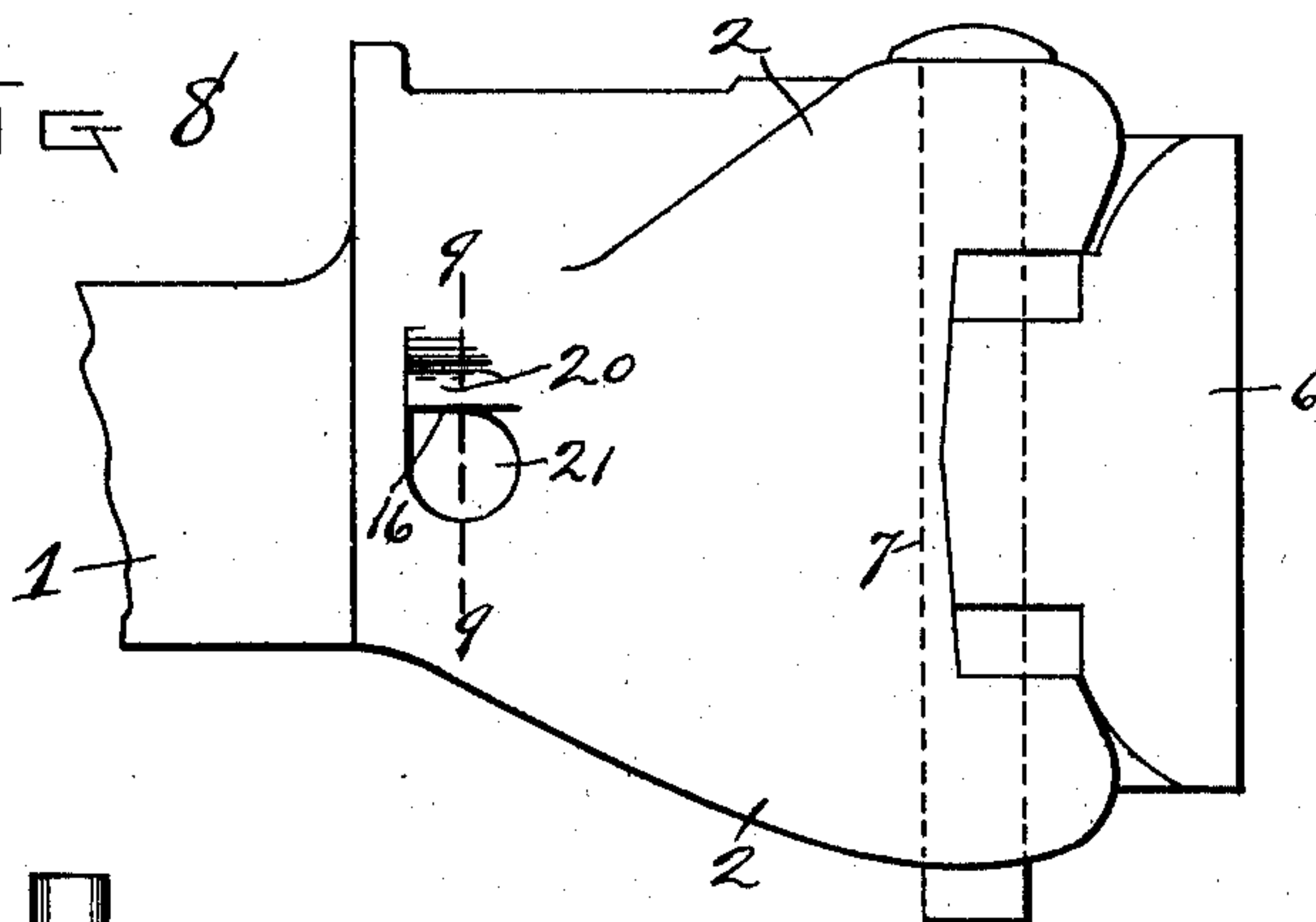
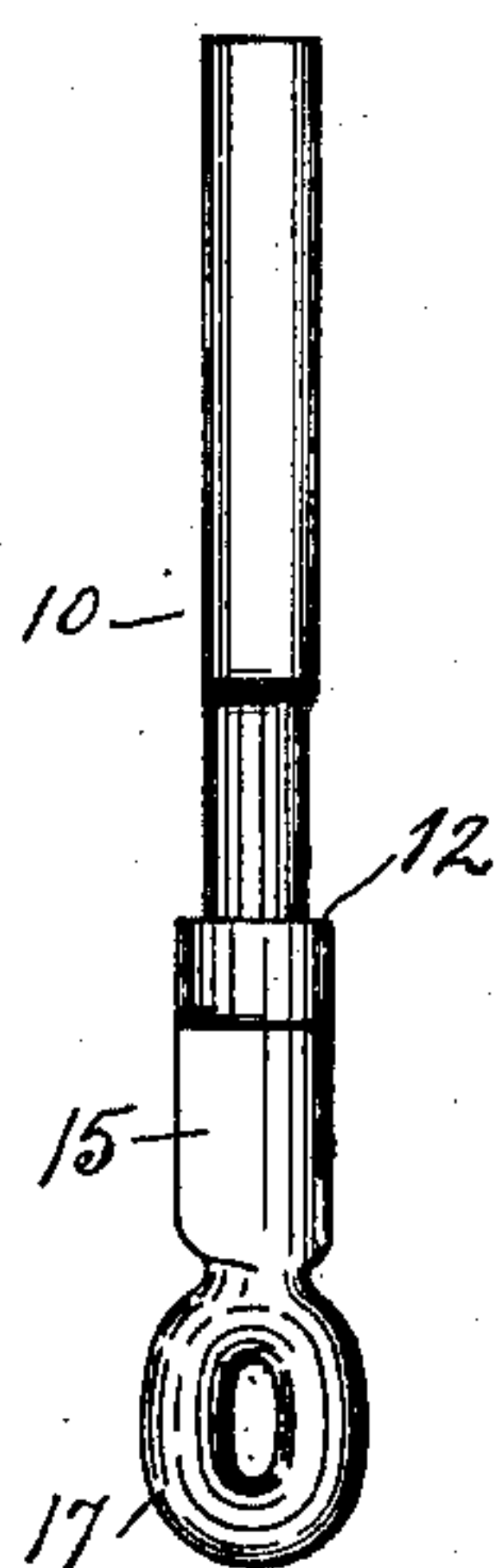


FIG 10



WITNESSES

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UNITED STATES PATENT OFFICE.

ALFRED H. RENSHAW, OF TROY, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 737,772, dated September 1, 1903.

Application filed January 19, 1903. Serial No. 139,499. (No mc)

To all whom it may concern:

Be it known that I, ALFRED H. RENSHAW, a citizen of the United States, residing at Troy, county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

The invention relates to such improvements; and it consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the reference characters marked thereon, which form a part of this specification.

Similar characters refer to similar parts in the several figures therein.

This invention relates to that class of car-couplers shown and described in United States Letters Patent No. 431,195, issued to A. H. Renshaw and H. H. Burden July 1, 1890.

The object of this invention is to provide means for locking the lock-block in a raised position without causing the knuckle to swing outwardly to the open position, but leaving it free to do so, and permit one car to be uncoupled from another without further hand manipulation, whereby in shunting an end car from a train of coupled cars the lock-block may be raised to an unlocking position and locked in such raised position in one of the couplers between the end car to be shunted and the train, which end car remains coupled to the train so long as it is pushed, and when the speed of the train is checked the end car is automatically uncoupled and advanced by reason of its momentum over a switch to another track, the train being stopped before reaching the switch.

The invention consists in providing the actuating-rod and the draw-head with interlocking surfaces and the push-block with the countersink at the outer end of its rod-aperture, so that the rod may be given a rotatory motion to raise the lock-block and then a reciprocatory inward movement to bring the locking-surfaces on the rod and draw-head into engagement with each other to securely lock the lock-block in its raised position without operating the push-block, the shoulder on the actuating-rod, which is designed to operate the push-block, being free to reciprocate

or slide in the countersink sufficiently to bring the locking-surfaces together without engaging the shoulder or bottom of the countersink on the push-block to operate such block, whereby the coupler is unlocked, but the knuckle not opened until a further reciprocating movement is imparted to the actuating-rod, causing the shoulder on the rod to engage the bottom of the countersink and force the push-block inwardly to open the knuckle, as will be hereinafter more fully shown and described and subsequently pointed out in the claims.

Referring to the drawings, Figure 1 is a central horizontal section of one of the two like parts forming a car-coupler, showing the position of the parts when the coupler is in a locked position and showing the actuating-rod in full. Fig. 2 is a similar view showing the knuckle swung out to an open or unlocked position and the locking-block raised to an unlocking position. Fig. 3 is a cross-section of the locking-block, taken on the broken line 3 3 in Fig. 1. Fig. 4 is a vertical section taken on the broken line 4 4 in Fig. 1. Fig. 5 is a similar section taken on the broken line 5 5 in Fig. 1 and showing the side of the draw-head in elevation. Fig. 6 is a similar section taken on the broken line 6 6 in Fig. 2. Fig. 7 is a view similar to that shown in Figs. 1 and 2 and showing the push-block in a position to swing the knuckle of the coupler outward to an open position. Fig. 8 is a side elevation of the draw-head with the knuckle in a closed position. Fig. 9 is a vertical section of the outer wall of the draw-head, taken on the broken line 9 9 in Fig. 8. Fig. 10 is a plan view of the actuating-rod detached and given a rotatory movement to the position shown in Figs. 2 and 6. Figs. 3, 4, 5, 6, and 9 are made upon an enlarged scale.

The draw-bar 1 (shown partly broken away) is provided with a hollow head 2, which contains the lock-block 3 and the push-block 4 and the tail end 5 of the knuckle 6. The knuckle is secured to the head by means of the vertical pin 7. The lock-block, knuckle, and push-block are operated or actuated by the rod 10, called the "actuating-rod."

The movable parts are shown in a locked position in Fig. 1, wherein the lock-block has

been dropped down in front of the tailpiece of the knuckle, securely locking the same in the position shown.

The actuating-rod is capable of a reciprocatory movement only through the lock-block, the cross-sectional form of the rod and its aperture in the lock-block being shown in Fig. 3. The rod is capable of a rotary movement in the push-block and when in the position shown in Fig. 1 of a rotary movement in the head. By imparting to the rod a rotatory or rocking movement to the left the lock-block is lifted from in front of the tailpiece 5 to the position shown in Fig. 2, which leaves the knuckle free to swing to an open position, as seen in that figure. When the lock-block has been so raised to its unlocking position, the knuckle can be forced open by an inward reciprocatory movement of the actuating-rod if the movement is sufficient to cause the shoulder 12 to engage the push-block and force the latter out to the position shown in Fig. 7; but if it is desired to unlock the coupler without opening the same, as in shunting an end car from a train, the actuating-rod is given an inward reciprocatory movement, while the lock-block is raised sufficient only to permit the shoulder 12 to approach or slightly engage the bottom of the countersink 14 at the outer end of the aperture in the push-block, which receives the actuating-rod. This last inward reciprocatory movement brings into engagement with each other the locking-surface 15 on the actuating-rod and the similar surface 16 on the draw-head. This will be easily understood by reference to the cross-sectional views in Figs. 4, 5, and 6. That part of the actuating-rod where section 4 is taken is circular in cross-section, as seen in Fig. 4, while the aperture has a V shape on the upper left-hand side, presenting what is termed a "locking-surface" at 16. The connecting-rod between the handle 17 and the cylindrical portion is provided with a V-shape projection, as seen in Fig. 5, which has on one side the locking-surface 15. When the locking-rod is given a rotatory movement to lift the lock-block, it rotates from the position shown in Figs. 1 and 5 to that shown in Figs. 2 and 6. It will be seen in Fig. 6 that the V-shape projection on the rod is adapted to fit the V-shape groove in the wall of the draw-head when the rod is given an inward reciprocatory movement, whereby the engagement of the locking-surfaces 15 on the rod and 16 on the draw-head prevents any rotatory movement of the rod and the lock-block is securely locked in its raised or unlocking position. When desired, the wall of the draw-head at this point may be thickened by an outward projection 20, as seen in Figs. 8 and 9, the rod-aperture being shown at 21.

In order that the locking-surfaces may be brought into engagement with each other, it is necessary that the cylindrical portion of the actuating-rod should pass approximately all the way through the wall of the draw-

head, and to permit of such passage the push-block is provided with the countersink 14, deep enough to permit of the reception of the cylindrical portion of the actuating-rod, as seen in Fig. 2, whereby a sufficient reciprocatory movement may be imparted to the actuating-rod to bring the locking-surfaces 15 and 16 into and out of engagement with each other without disturbing the position of the push-block.

It is not intended to limit the location of the interlocking surfaces on the rod and head to any particular position, as it is obvious they may be located at the inner end of the rod or at any point where surfaces on the rod and head could interlock.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a car-coupler of the class described, the combination with a lock-surface on the reciprocatory and rotatory block-actuating rod; of a lock-surface on the draw-head adapted to be engaged by the lock-surface on the rod when the rod is given a rotatory movement to raise the lock-block from its locking position and subsequently an inward reciprocatory movement, whereby the lock-block is locked in such raised position, substantially as described.

2. In a car-coupler of the class described, the combination with the lock-block and draw-head; of an actuating-rod reciprocatory in apertures in such block and head, the said apertures and rod being so shaped in cross-section that while the rod is not rotatory in the lock-block in any reciprocatory position it is rotatory in the draw-head in one reciprocatory position to raise the lock-block from its locking position and in another reciprocatory position it is not rotatory in a direction to restore the lock-block to its locking position.

3. In a car-coupler of the class described, the combination with the lock-block, push-block and draw-head; of an actuating-rod movable in apertures in such blocks and head, the said apertures and rod being so shaped in cross-section that the push-block is provided with a countersink at the outer end of its rod-aperture, and the rod with a shoulder reciprocatory and rotatory in the said countersink, and so that the rod is reciprocatory only in the lock-block and rotatory in the draw-head to raise the lock-block from its locking position, then reciprocatory inwardly until the shoulder on the rod approaches the bottom of the countersink in the push-block and a locking-surface on the rod engages a locking-surface on the head to lock the lock-block in such raised position without operating the push-block, and then reciprocatory inwardly with the shoulder in engagement with the bottom of the countersink to operate the push-block while the lock-block remains locked in said raised position.

4. In a car-coupler of the class described, a push-block having a rod-aperture provided with a countersink at its outer end approxi-

mating in depth the thickness of the outer wall of the draw-head.

5 In a car-coupler of the class described, the combination with an actuating-shoulder on the reciprocatory and rotatory rod; of a push-block apertured for the passage of the rod and provided with a countersink at the outer end of the aperture in which the shoulder is free to travel during the reciprocatory
10 locking movement of the rod, and a shoulder

at the bottom of the countersink engageable by the rod-shoulder to actuate the push-block, substantially as described.

In testimony whereof I have hereunto set my hand this 15th day of January, 1903.

A. H. RENSHAW.

Witnesses:

GEO. A. MOSHER,
E. M. O'REILLY.