

No. 828,177.

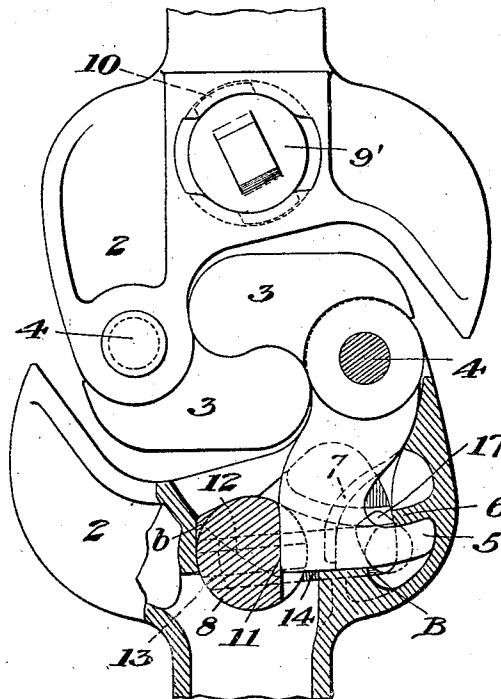
PATENTED AUG. 7, 1906.

A. J. BAZELEY.  
CAR COUPLING.

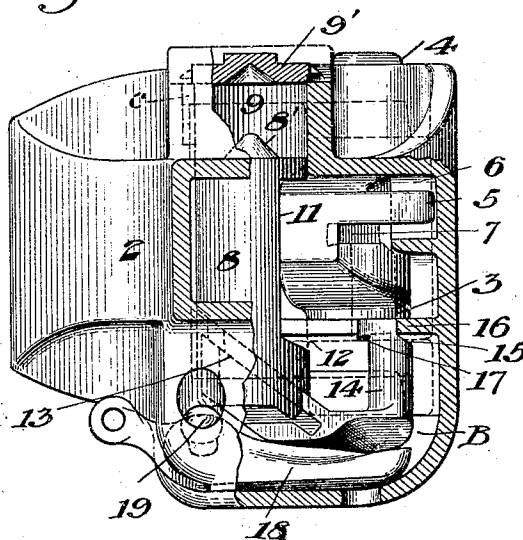
APPLICATION FILED JUNE 28, 1904. RENEWED NOV. 27, 1905.

3 SHEETS--SHEET 1.

*Fig. 1.*



*Fig. 2.*



WITNESSES

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INVENTOR

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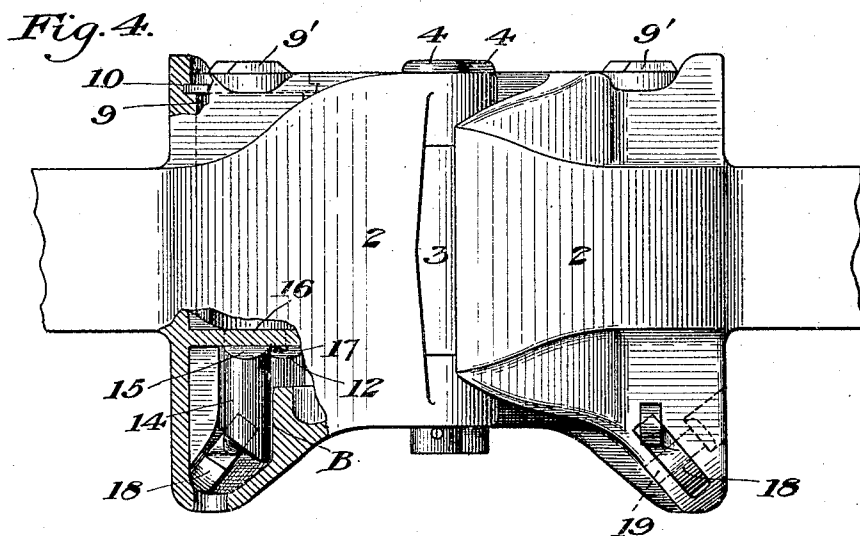
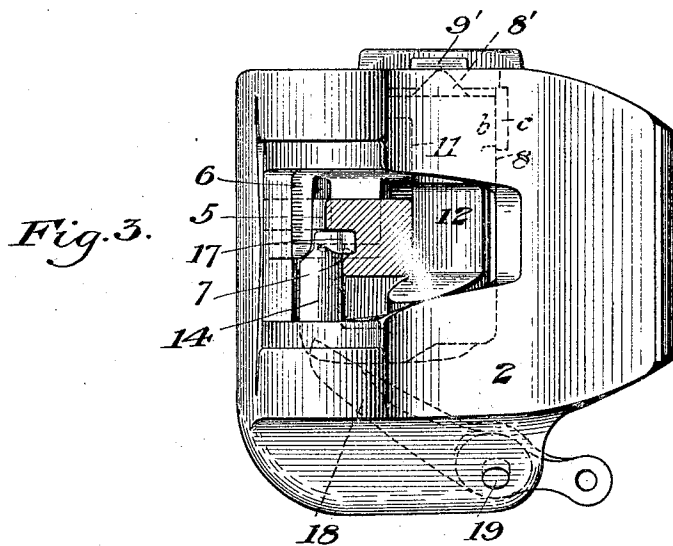
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3 SHEETS—SHEET 2.



WITNESSES

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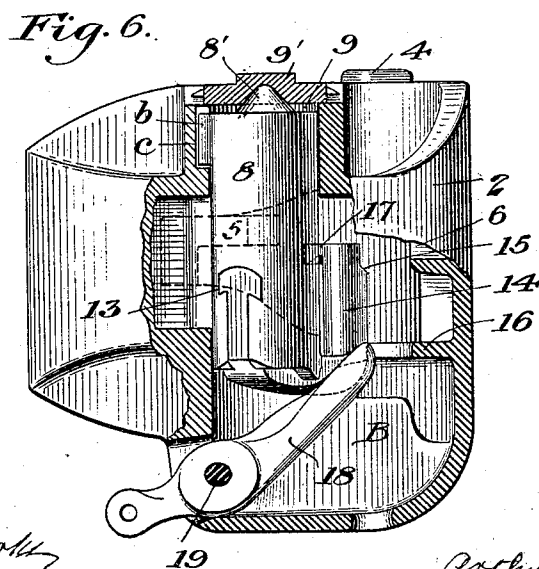
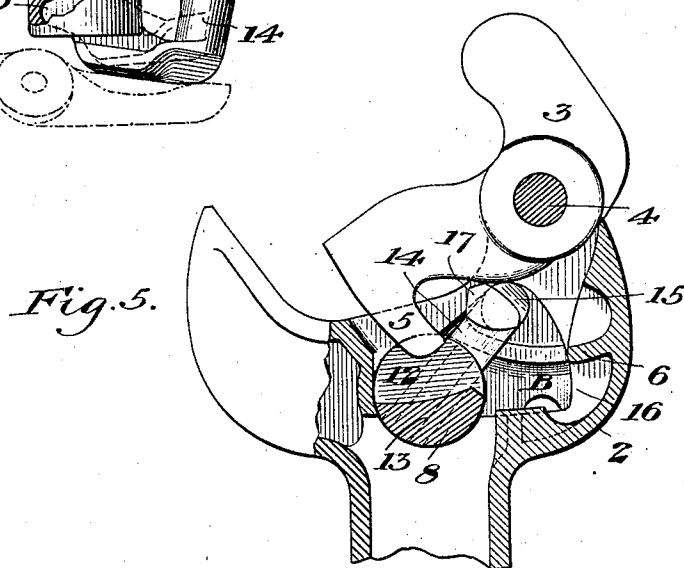
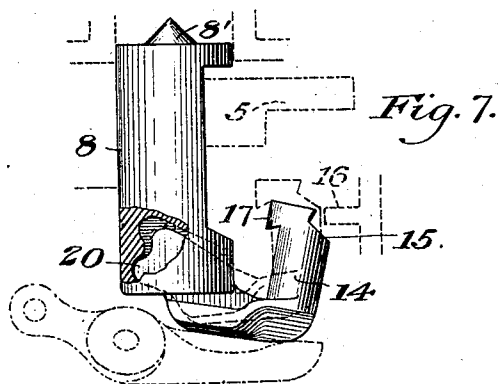
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3 SHEETS—SHEET 3.



WITNESSES

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# UNITED STATES PATENT OFFICE.

ARTHUR JAMES BAZELEY, OF CLEVELAND, OHIO, ASSIGNOR TO THE  
NATIONAL MALLEABLE CASTINGS COMPANY, OF CLEVELAND,  
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## CAR-COUPLING.

No. 828,177.

Specification of Letters Patent.

Patented Aug. 7, 1906.

Application filed June 28, 1904. Renewed November 27, 1905. Serial No. 289,245.

*To all whom it may concern:*

Be it known that I, ARTHUR JAMES BAZELEY, of Cleveland, Cuyahoga county, Ohio, have invented a new and useful Car-Coupler, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 shows two of my couplers coupled together, one of them being in plan and the other in horizontal section. Fig. 2 is a rear elevation, partly in vertical section, the coupler being in locked position. Fig. 3 is a front elevation showing the knuckle-tail in vertical section and the device in lock-set position. Fig. 4 is a side elevation of Fig. 1, partly broken away and showing the lock locked. Fig. 5 is a longitudinal section showing the knuckle open. Fig. 6 is a rear elevation, partly in section, the knuckle being open and the lever 18 raised to full opening position; and Fig. 7 illustrates a modification of the lock and the opening member.

The purpose of my invention is to provide a car-coupler of simple construction adapted without the necessity of the operator passing between the cars to lock and unlock the knuckle to throw the knuckle open or to lock-set it—that is to say, to unlock it and to leave it in unlocked position, so that it will open when the coupler to which it is coupled is pulled away. Means are also provided by which the lock is locked and held positively from creeping upwardly. All these features are secured with simplicity of apparatus and with greater efficiency than heretofore, and as these matters are of great moment in car-coupler constructions my invention is of importance and value.

The coupler shown in the drawings comprises in addition to the knuckle an upwardly-movable lock capable also of rotary motion and an opening member sliding on an incline and adapted to fit beneath a shoulder on the draw-head for the purpose of holding the lock in its locked position. An opening-lever is provided, which engages the sliding opening member, moves it independently of the lock, so as to free it from beneath the shoulder in the draw-head, and then raises the lock and pushes the opening member against the knuckle for the purpose of moving the knuckle open.

I will now describe the device as embodied in the preferable form of my invention, premising that those skilled in the art can modify it in various ways.

In the drawings, 2 is the coupler-head, and 3 is a knuckle which is pivoted in the coupler-head, preferably by a pin 4. This knuckle has at the rear end of its tail a hook portion 5, adapted to fit behind a retaining-shoulder 6 on the interior of the coupler-head, and has also on its outer lateral face and below the top of the knuckle-tail a shoulder formed by a recess 7 for the purpose of supporting the lock in lock-set position. A coupler-knuckle thus formed with a hook for engaging a shoulder on a draw-head and having on the rear surface of its tail a shoulder for holding the lock in lock-set position is new in itself, and I intend to make special claim thereto.

The lock 8 is vertically movable and is set in a recess 9 in the coupler-head. It is capable of moving vertically in this recess and of being rotated therein. To provide for its rotation, the upper end of the recess is closed by a cap 9', which is preferably removable, being attached by a rotary locking device 10.

In the operation of the lock it is first lifted so as to bring its upper end into contact with the cap and is then rotated, the rotation being facilitated, preferably, by a projection 8' at the upper end of the lock, which serves as a vertical pivot and engages the under side of the cap, preferably in a curved recess thereon. The lock has a locking portion 11 and below it a cut-away or recessed portion 12, so that when the lock is in its lowest position the locking portion is opposite the tail of the knuckle and confines the same, and if it is raised the recessed portion will be brought opposite to the knuckle-tail and will leave it free to be swung open. At the lower end of the lock and mounted in an inclined slideway 13 thereof is an opening member 14, preferably of approximately U shape, one of its arms fitting in the inclined slot 13, its intermediate portion being substantially horizontal and its other arm having a shoulder 15, adapted to take under a shoulder 16 in the draw-head, and having a shoulder or projection 17, adapted to take into the recess 7 on the knuckle when in lock-setting position. When the lock is in its locking position, the member 14 fits in a vertical recess B in the

floor of the coupler-head and is held thereby from turning horizontally. It may also be held from turning by being formed with a squared portion *b*, which when the coupler is locked fits against a squared portion of the draw-head, Figs. 1 and 2; but which when the lock is raised comes opposite to a recess *c* and will then oppose no obstacle to the turning of the lock, Fig. 6.

Below the member 14 is an opening arm or lever 18, which is fulcrumed in the draw-head on a pin 19, inclined so that the lever will turn in an inclined plane having an upward and forward direction, the upper direction being for the purpose of raising the lock by motion imparted primarily to the opening member and the forward direction being for the purpose of pushing the opening member 14 against the knuckle, and thus throwing the knuckle open, the lock meanwhile rotating on its vertical axis, so as to accommodate itself to the motion of the opening member. The lower surface of the opening member 14 is beveled, as shown, in order that it may present a surface approximately at right angles to the plane of motion of the opening-lever and may thus facilitate its action.

When the parts of the coupler are in locked position, the tail of the knuckle extends toward the rear of the coupler and the lock is in its lowest position, with the portion 11 thereof blocking the tail of the knuckle, and the opening member 14 also in its lowest position, having moved downwardly in the inclined slot 13, its shoulder 15 fitting under the shoulder 16 on the draw-head, Fig. 2. If in the jarring motion of the car the lock should tend to rise, it cannot draw the member 14 away from the shoulder 16, and the engagement of the member 14 with said shoulder will positively and effectively hold the lock down in its locked position.

If it is desired to unlock and lock-set the coupler without throwing the knuckle open, the operator moves the opening-lever 18, thus causing its inner end to engage the member 14 and to move it in the inclined slot 13, thus releasing its shoulder 15 from engagement with the shoulder 16 on the draw-head, and then raising it, together with the lock 8, until the locking portion 11 has passed above the knuckle and has freed the same, and the member 14 is lifted above the limit of the slot B. This motion brings the shoulder 17 opposite to the recess 7 on the rear face of the knuckle-tail, and the opening member 14 being free to turn radially the lever then turns it on the vertical axis of the lock, bringing the shoulder 17 into the recess 7, Fig. 3. This supports the member 14 and the lock in unlocked position, leaving the knuckle free to be pulled open when the car to which it is coupled is drawn away.

If the knuckle is closed and not in engagement with the coupler of another car and it

is desired to swing it into open position, the operator moves the lever 18 to its full extent, Figs. 5 and 6. This raises the member 14 free of the recess B in the floor of the coupler-head, as above explained, and then turns it radially on the axis of the lock and pushes the knuckle into open position. When the knuckle is next moved back, it will push the member 14 before it until said member comes above the recess B in the floor of the coupler-head, when the lock and opening member will drop and the lock engaging the front of the knuckle-tail will hold it in locked position.

Within the scope of the invention as herein claimed the parts may be modified in many ways. Thus the purpose of making the opening member 14 separate from the lock and fitting it movable thereto is to enable the lock to be locked in its locked position; but if this function is not desired the opening member 14 may be made integral with the lock and the shoulder 15 dispensed with.

In Fig. 7 I show another modification in which the opening member 14 is connected by a pivotal joint 20 with the lock 8, and thus affords the slight independent motion necessary to cause the shoulder 15 to engage the down-holding shoulder 16 on the draw-head.

Other modifications may be made by those skilled in the art.

I claim—

1. A coupler having an opening member and an upwardly-movable lock rotating on its vertical axis and actuated by the opening member; substantially as described.

2. A coupler having an opening member and an upwardly-movable lock rotating on its vertical axis and actuated by the opening member, and means for holding it from rotating when locked; substantially as described.

3. A coupler having an opening member and an upwardly-movable lock rotating on its vertical axis and a lifting and rotating device which acts upon the opening member; substantially as described.

4. A coupler having an opening member and an upwardly-movable lock rotating on its vertical axis, and an opening-lever journaled to rotate in an inclined plane; substantially as described.

5. A coupler having an opening member and an upwardly-movable rotating lock actuated by motion imparted primarily to the opening member, a recess in the coupler-head in which said opening member is movable, and means for lifting it above the recess and turning it; substantially as described.

6. A coupler having an opening member, an upwardly-movable lock, means for moving it upwardly, and a stop for its upward movement constituting a bearing on which the lock turns; substantially as described.

7. A coupler having an opening member extending under the knuckle-tail adapted to engage the rear side thereof, and an upwardly-movable rotating lock actuated by motion imparted primarily to the opening member; substantially as described. 5
8. A coupler having an upwardly-movable lock, a down-holding shoulder and an opening member connected to the lock and adapted to have a small motion independent thereof to engage the down-holding shoulder; substantially as described. 10
9. A coupler having an upwardly-movable rotating lock, a down-holding shoulder and an opening member connected to the lock and adapted to have a small sliding motion independent thereof to engage the down-holding shoulder; substantially as described. 15
10. A coupler having an opening member extending under the knuckle-tail adapted to engage the rear side thereof, and an upwardly-movable lock, said opening member being movably attached to the lock to actuate said lock and adapted to engage a shoulder on the coupler-head; substantially as described. 20
11. A coupler having an upwardly-moving lock set in a recess in the coupler-head, and having a stop at the upper end to constitute a bearing for the lock to turn said lock on an upright axis; substantially as described. 30
12. A coupler having an upwardly-movable rotating lock, and an opening member connected to the lock and adapted to have a small motion independent thereof to engage a down-holding shoulder; substantially as described. 35
13. A coupler-knuckle having a hook for engaging a shoulder on the draw-head and having on the outer lateral face of the knuckle tail, below the upper surface thereof, a recess forming an adjacent shoulder for holding the coupler-lock in lock-set position; substantially as described. 40
14. A coupler-lock having an opening member connected thereto at its lower end and having a small motion independent thereof; substantially as described. 45
15. A coupler-lock adapted to move vertically and having at its upper end a pivotal projection; substantially as described. 50
16. A coupler-knuckle having on the outer lateral face of its rearwardly-extending tail a recess below the upper face of the tail, said recess forming an adjacent shoulder for holding the coupler-lock in lock-set position; substantially as described. 55
17. A coupler having a horizontally-rotatable locking and opening piece, a portion of which is adapted to lock the knuckle and a portion of which is adapted to move it forward, and a lever for pushing said piece forward against the knuckle; substantially as described. 60
18. A coupler having a locking and opening piece, a portion of which is adapted to lock the knuckle, and a portion of which is adapted to move it forward and a lever adapted to engage the lower part of said piece and to free it from the knuckle and push it forwardly against the knuckle; substantially as described. 65
19. A coupler having a lock provided with an opening member adapted for independent motion relatively to the lock, and arranged to engage the coupler-head to lock the lock; substantially as described. 70
20. A coupler having a lock provided with an opening member adapted for independent motion relatively to the lock, and an actuating-piece adapted to engage the opening member and to transmit motion through the opening member to the lock; substantially as described. 75
21. A coupler having a lock provided with an opening member adapted for independent motion relatively to the lock, and arranged to engage the coupler-head to lock the lock, and an actuating-piece adapted to engage the opening member to free it from such locking engagement and by a continued movement to transmit motion to the lock through the opening member; substantially as described. 80
22. A coupler having a lock provided with an opening member adapted for independent motion relatively to the lock and constructed to engage the knuckle to lock-set the lock; substantially as described. 85

In testimony whereof I have hereunto set my hand.

ARTHUR JAMES BAZELEY.

Witnesses:

HENRY F. POPE.

HARRY E. ORR.