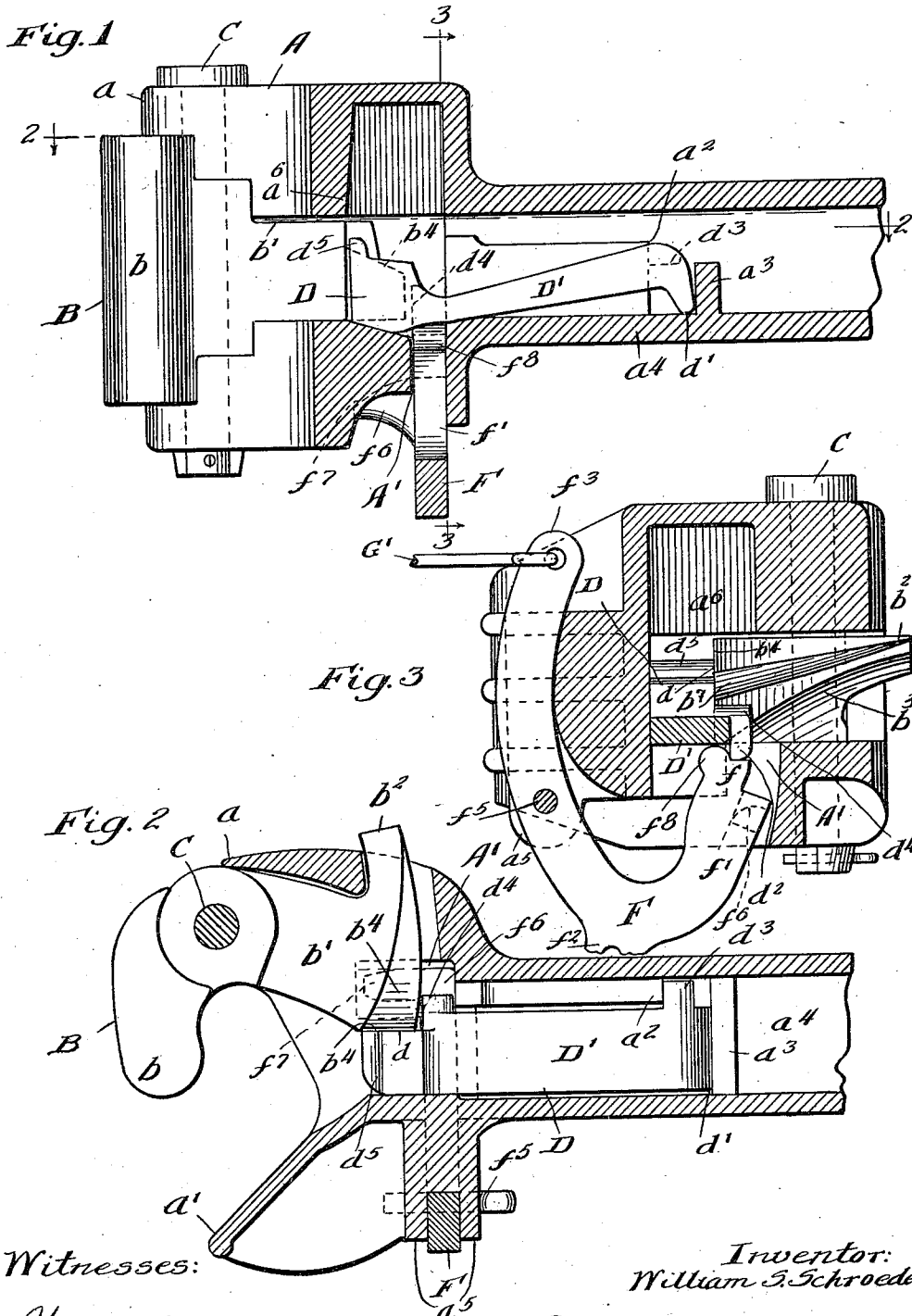


Patented Feb. 4, 1913.

2 SHEETS—SHEET 1.

1,052,383.



Witnesses:

Wm. Gager
A. W. Munday

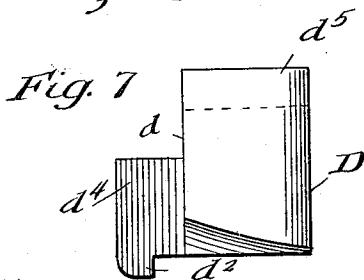
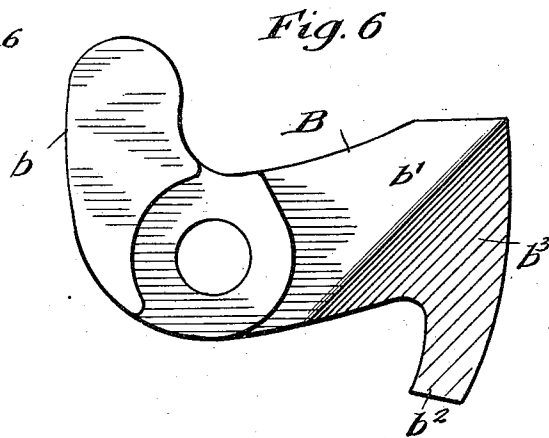
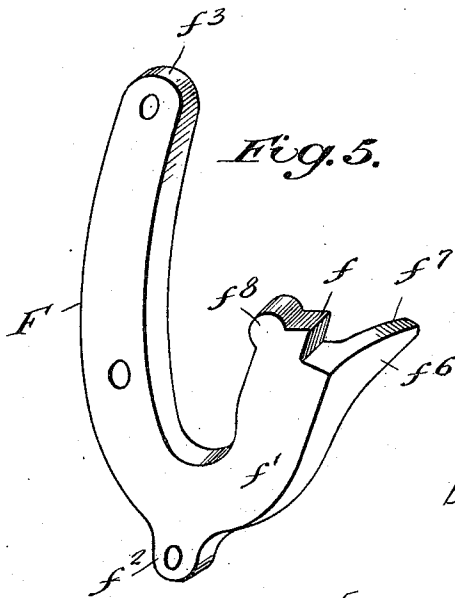
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1,052,383.

2 SHEETS—SHEET 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM S. SCHROEDER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE NATIONAL MALLE-
ABLE CASTINGS COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

CAR-COUPLING.

1,052,383.

Specification of Letters Patent.

Patented Feb. 4, 1913.

Application filed August 12, 1909. Serial No. 512,480.

To all whom it may concern:

Be it known that I, WILLIAM S. SCHROEDER, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Car-Couplers, of which the following is a specification.

My invention relates to improvements in car couplers of the kind commonly known as bottom lift or under-lift couplers, and more particularly to improvements upon the coupler forming the subject of my Patent No. 911526 of Feb. 2, 1909.

The object of my present improvement is to provide a bottom lift or under-lift coupler of the Master Car Builder's type, in which the bottom lifting device for the lock will serve not only as a lifter for the lock, and as a lock set for supporting the lock in position for uncoupling, but also in itself as a means for throwing the knuckle open, thus enabling me to dispense with a separate knuckle throwing lever or device.

A further object of my present improvement is to so combine and arrange the bottom lifter with the draw-head and knuckle, that the arm of the lifter which raises the lock will itself swing in the direction for following up the tail of the knuckle as the knuckle swings open, thus causing the knuckle opening device to throw the knuckle fully open.

A further object is to so construct, combine and arrange the parts, that the lifter may be operated from either side of the car.

A further object is to simplify and improve the general construction of the coupler of my said Patent 911526.

My invention consists in the means I employ to practically accomplish the above objects or results as herein shown and described, and more particularly specified in the claims, the same consisting generally in combination with the coupler draw-head, knuckle and lock, of a bottom lifter for the lock, provided on its lock raising arm with a knuckle throwing wing or projection, preferably furnished with an inclined or cam face adapted to engage the inclined or cam face which is also preferably provided on the tail or rear arm of the knuckle; in hinging or fulcruming the lifter on the guard arm side of the draw-head instead of on the pivot arm side thereof, as in my said

former Patent 911526, so that the lock raising arm of the lifter will swing in the direction the tail of the knuckle moves in opening, thus following up the opening movement and causing the knuckle to be fully opened; in providing the lifter with two operating arms, one for attachment with a connection leading to one side of the car and the other for attachment with a connection leading to the opposite side of the car so that the lifter may be operated from either side when desired; and in certain details of construction of the lock and adjacent parts whereby the lock is retained in position and kept from being removed as long as the knuckle is in position, and the construction otherwise simplified and improved.

My invention further consists in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown and described and more particularly specified in the claims.

In the accompanying drawing forming a part of this specification, Figure 1 is a longitudinal vertical section of a car coupler embodying my invention. Fig. 2 is a horizontal section on line 2—2 of Fig. 1. Fig. 3 is a vertical cross section on line 3—3 of Fig. 1. Fig. 4 is a similar view showing the parts in a different position. Fig. 5 is a detail perspective view of the lifter for the lock. Fig. 6 is a detail bottom plan view of the knuckle. Fig. 7 is a front elevation of the lock.

In the drawing, A represents the draw-head of a Master Car Builder's coupler, having the customary pivot arm *a* and guard arm *a*¹.

B is the knuckle secured to the pivot lugs of the draw-head by a pivot pin C, and having the usual front arm *b* and rear arm or tail *b*¹, the latter having the usual hook or extension *b*², and being also provided on its under side with a knuckle throwing cam or incline *b*³ for engagement with a knuckle throwing arm or wing with which the lifter is provided.

D is a gravity or vertically movable lock, having an upright locking face *d* adapted to engage the corresponding upright locking face *b*⁴ of the knuckle tail to hold the knuckle in its closed or coupled position. The gravity lock D may be of any suitable kind or construction. It, however, is pref-

erably provided with a longitudinal shank or extension D^1 adapted to fit within the draw-bar and provided with a pivot toe or projection d^1 at its rear end which rests on the bottom wall or floor a^4 of the draw-bar. The lock D is also provided, or preferably provided, on its lower face with a lock-set shoulder d^2 adapted to be engaged by the lock-set toe or projection f of the lock lifter F , and thus cause the said lifter to also serve as a lock-set for holding the lock in its raised position, so that the knuckle can swing open when the cars separate. The lock D is also preferably provided on one side at its rear end with a stop lug a^3 adapted to engage a stop shoulder a^2 on the inside upright wall of the draw-bar to prevent the lock from moving forward, and serving in conjunction with the rear stop a^3 in the draw-bar to hold the lock longitudinally in position while permitting it to move up and down as required for coupling and uncoupling. The lock D is further provided near the front end of its shank D^1 with a guide shoulder or stop lug d^4 adapted to engage the rear face of the knuckle tail, and prevent the lock from moving forward in case the rear end of the lock shank should be jolted or thrown up by a shock to the car so as to clear the stop shoulders a^2 on the draw-bar. The lock D is further provided at its front end on its upper face with an upwardly projecting lip d^5 to serve as a stop against the upper front wall a^6 of the draw-head to prevent the lock from moving forward when it is raised into lock-set position. The rear arm or tail of the knuckle is provided on its upper side with an inclined or cam face b^7 which serves to further raise the lock as the knuckle swings open and thus disengages its lock-set shoulder from the lock-set toe f of the lifter, and thus permit the lifter to drop out of the way into its normal position, the lock then riding on the tail of the knuckle and being supported thereby.

The bottom lifter F is preferably a bent lever, having a lock raising arm f^1 adapted to project upward through an opening A^1 in the bottom wall of the draw-head, and it is fulcrumed or pivotally connected by a pin f^5 to the draw-head on the guard arm side thereof, preferably about as indicated in the drawing so that when the lifter is operated to raise the lock, its lock raising arm f^1 will swing in the direction that the knuckle tail moves in opening, thus tending to follow up the knuckle tail as it swings open. To thus pivotally mount or fulcrum the lifter F on the guard arm side of the draw-head, the guard arm is provided with

pivot lugs a^5 with a slot between them to receive the lifter F , the pivot lugs being preferably extended upward to protect the upper operating arm of the lifter. To cause the bottom lifter F to also serve in itself as a means for throwing the knuckle open, I provide its lock raising arm f^1 with a knuckle throwing wing, arm or projection f^6 , preferably furnished with a curved incline or cam face f^7 for engagement with the knuckle throwing incline or cam face on the underside of the knuckle tail. The lock raising or lifting arm of the lifter F is also preferably furnished at its extreme upper end with a rounded projection f^8 to give it a central bearing against the under face of the lock.

G and G^1 are operating connections extending one to each side of the car for operating the lifter from either side, as may be desired. The connection G is attached to the lower operating arm f^2 of the lifter, and the connection G^1 is attached to the other or upwardly projecting operating arm f^3 .

I claim:—

1. In a bottom-operating car coupler draw head, a pivoted knuckle, a vertically movable lock, and a lever member having one arm projecting upwardly into the coupler cavity through a hole in its bottom, said arm having two different portions, one portion arranged to directly engage and lift the lock, and the other portion of said arm being shaped and arranged to directly engage the tail of the knuckle and to throw the knuckle open by combined vertical and pulling movement, the lever member being pivoted to the guard arm side of the draw head, so that the lever arm in lifting will move toward the guard arm side, substantially as described.

2. In a bottom-operating car coupler draw head, a pivoted knuckle, a vertically movable lock, and a lever member having one arm projecting upwardly into the coupler cavity through a hole in its bottom, said arm having an upper surface arranged to directly engage and lift the lock and having at a lower level a projecting wing arranged to directly engage the knuckle tail to open the knuckle, said arm also having a lock-setting projection for the lock the lever member being pivoted to the guard arm side of the draw head, so that as the lever arm rises it will move toward the guard arm side, substantially as described.

WILLIAM S. SCHROEDER.

Witnesses:

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E. ABRAMS.