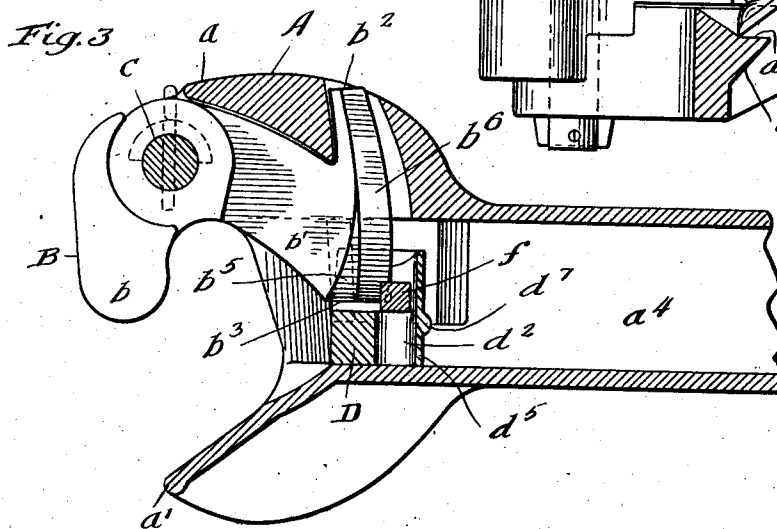
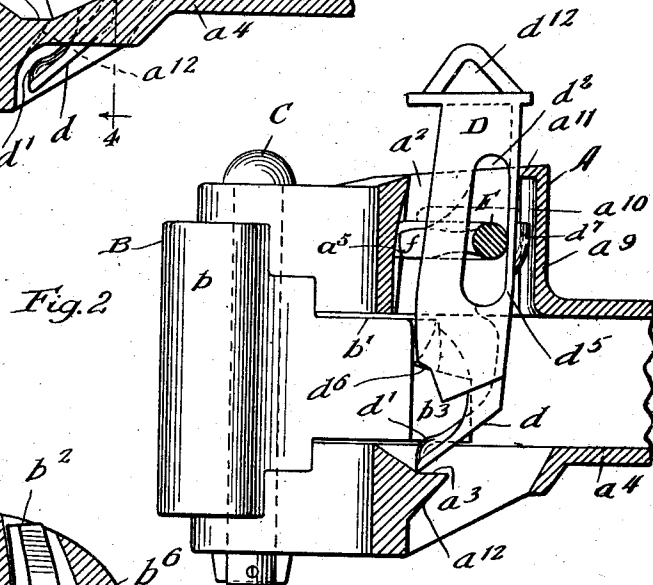
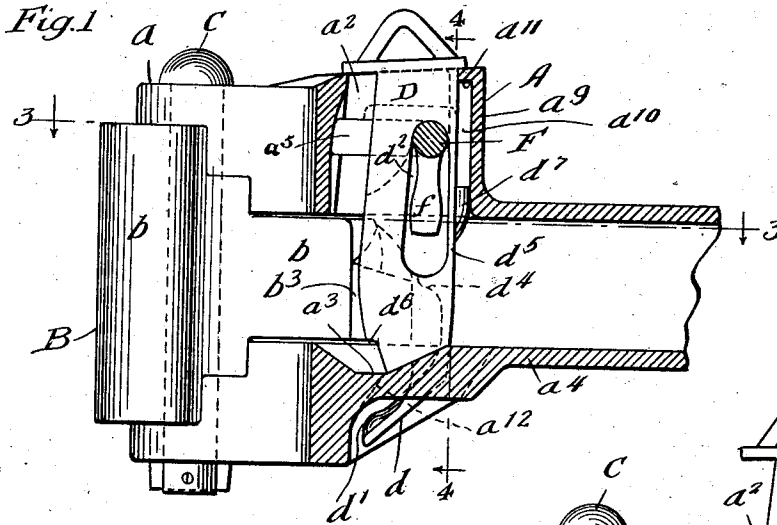


W. S. SCHROEDER.
CAR COUPLING.
APPLICATION FILED MAY 1, 1908.

1,010,810.

Patented Dec. 5, 1911.

2 SHEETS—SHEET 1.



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2 SHEETS-SHEET 2.

Fig. 4

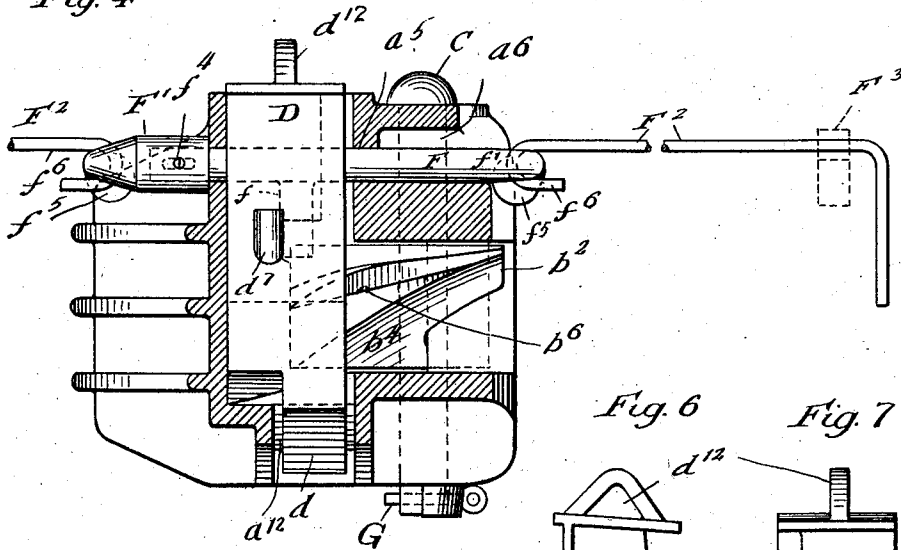


Fig. 6

Fig. 7

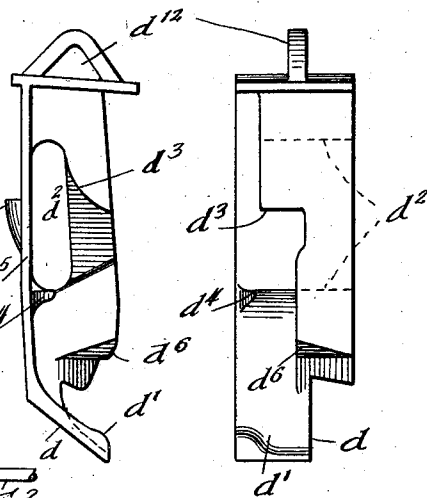


Fig. 5

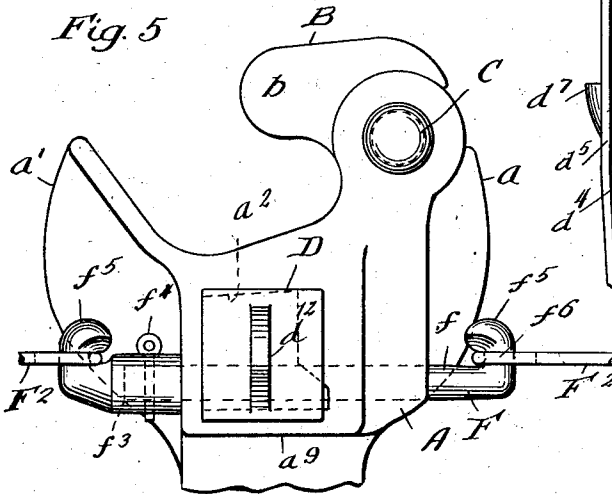


Fig. 9

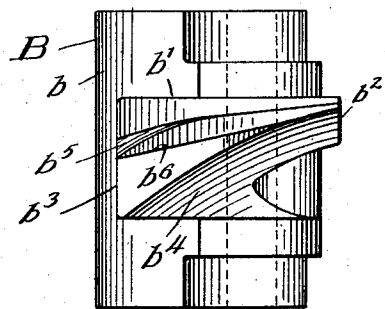
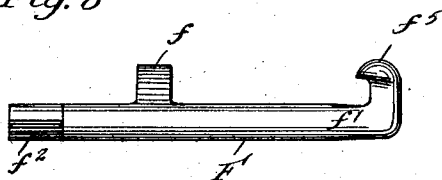


Fig. 8



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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

1,010,810.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Application filed May 1, 1908. Serial No. 430,397.

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. Its object is to provide a side lift coupler of a strong, simple, efficient and durable construction, having provision for setting the lock in coupling and uncoupling positions and throwing the knuckle open, and means for preventing the lock from creeping, in which the lock may be raised and the knuckle thrown open from either side of the car.

It consists in connection with the forked draw-head, pivoted knuckle, vertically movable gravity lock and knuckle thrower, of a two piece side lift lever extending laterally through the draw-head, the members of which are detachably connected together to enable the lever to be inserted and removed, and each member of which is provided with means for connection with the operating lever, one at one side of the draw-bar and the other at the other, so that the coupler may be conveniently operated from either side of the car.

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.

In the accompanying drawing forming a part of this specification, Figure 1 is a central vertical longitudinal section of a car coupler embodying my invention. Fig. 2 is a similar view showing the lock set in position for uncoupling. Fig. 3 is a horizontal section on line 3—3 of Fig. 1. Fig. 4 is a vertical section on line 4—4 of Fig. 1. Fig. 5 is a detail plan view. Figs. 6 and 7 are detail views of the lock. Fig. 8 is a detail plan view of one member of the double ended side lift lever and Fig. 9 is a rear elevation of the knuckle.

In the drawing, A represents the draw-head of the coupler, having the customary pivot arm *a* and guard arm *a*¹; B the knuckle, having the customary front arm or nose *b* and rear arm or tail *b*¹; C the pivot pin, D the vertically movable side lift lock fitting in the vertical aperture *a*² of the draw-head; and F F¹ the double ended two piece side

lifting lever extending laterally through the draw-head and F² F² the operating or hand levers extending to the side of the car and coupled or connected, one to each end of the side lift lever F F¹.

The draw-head A has a lock-set seat *a*³, on its lower web or floor *a*⁴ adjacent to the lock aperture *a*² therein. The rear arm or tail *b*¹ of the knuckle is furnished with the customary hook or extension *b*², and with a flat upright face *b*³ to engage the lock. The rear arm or tail of the knuckle is also provided on its under side with an upwardly and laterally extending knuckle throwing incline *b*⁴, and also on its upper side or face with an upper and inner track, way or incline *b*⁵, and a lower or outer track, way or incline *b*⁶ for the lock D to ride upon as the knuckle swings open and closed. The two inclines *b*⁵ and *b*⁶ preferably intersect each other, about as shown in the drawing, and the upper and inner one *b*⁵, or the one which is nearer the pivot of the knuckle, serves to lift or disengage the lock from its lockset seat on the draw-head when the knuckle begins to swing open, the further opening movement of the knuckle then permitting the lock to drop back slightly off of the upper incline, *b*⁵, onto the lower one *b*⁶, the path of course of which is such as to so guide the lock, on its descent into the coupling position when the knuckle subsequently closes, that the lock cannot in such descent again engage the lock-set seat on the draw-head. This positively and absolutely prevents all failure to couple by reason of the lock on its descent reengaging the lock set seat.

The lock D is provided at its lower end with a downwardly and forwardly projecting lock set leg or extension *d*, having a curved or cam-like upper face *d*¹ adapted to engage the knuckle throwing incline *b*⁴ on the rear arm or tail of the knuckle to throw the knuckle open.

The vertically movable gravity lock D is provided on the knuckle side thereof with a recess *d*², having an upper curved or cam-like wall or face *d*³ for the bent lifting arm *f* of the lifting lever F F¹ to engage or slide and lift against, and having a lower wall or stop shoulder *d*⁴. This shoulder *d*⁴ also acts as a stop to prevent creeping of the lock when the knuckle and lock are in their closed or coupled position by engagement with the lower end of the lifting arm *f*, as will be

readily understood from Fig. 1 of the drawing. The recess d^2 also has an upright back wall d^5 . The lock D also has at its front corner a shoulder d^6 which engages and
 5 rides upon the inclines or ways b^5 b^6 of the knuckle tail.

The double ended or two piece side lifting lever F F^1 extends horizontally through a side opening or bearing a^5 in the draw-head at one side thereof above the knuckle tail, and the draw-head is also provided with a horizontally and forwardly extending covered recess a^6 to accommodate the shank portion f^1 of the member F of the lifting lever when the same is swung horizontally forward to enable its right angle lifting arm f to be removed from the draw-head through said opening a^5 .
 15

The two members F F^1 of the lifting lever are preferably telescopically secured together, the member F having a square or non-circular end f^2 which fits in a corresponding socket f^3 in the sleeve member F^1 of the lifting lever, the two parts being detachably connected together by a removable cotter pin f^4 . Each member of the lifting lever is provided at its outer end with a right angle hook arm f^5 for detachable connection and engagement with the corresponding hook arm f^6 of the hand lever F^2 which extends to the side of the car.
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 25
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To impart to the lock a further knuckle opening movement and thus cause the same to throw the knuckle completely open, I provide the back wall a^9 of the lock opening a^2 in the draw-head with a vertical slot or recess a^{10} , the end of which forms a stop or shoulder a^{11} which coöperates with the stop or shoulder d^7 on the rear face of the lock D, so that the final portion of the upward swinging movement on the lifting arm f on the lifting lever F F^1 will force the lower end of the lock forward against the knuckle throwing incline b^4 of the knuckle tail, and
 35
 40
 45 thus throw the knuckle fully and completely open.

The hand levers F^2 which extend to the side of the car are each loosely supported by brackets F^3 secured to the front of the car. The loose or knuckle joint-like connection 50 formed by the hook arms on the hand levers F^2 and lifting members F F^1 enables the draw-head of the coupler to move back and forth or up and down as required, without causing any binding strain between the lifting lever and the hand lever. 55

The draw-head A is provided with an inclined projection a^{12} under which the lock-set and knuckle throwing leg or extension of the lock fits when the lock is in its lowermost or closed position. This aids in preventing the lock from creeping when the cars are coupled together. When the lock is lifted by the side lifting lever F F^1 , the lower end of the lock swings slightly backward at the initial upward movement to permit the knuckle throwing leg to clear this rearward projection a^{12} of the draw-head. 60
 65

The lock D has an eye d^{12} at its upper end so that it may be used as a top lift lock instead of a side lift lock if occasion should require. 70

The draw head is furnished on its lower face with a depending flange a^9 to receive 75 a cotter pin G which extends through the lower end of the pivot pin C to hold the same in place and keep it from being accidentally or maliciously removed.

I claim:— 80

In a car coupler, the combination with a draw-head, knuckle and lock, of a horizontally extending rotatable side lift lever extending through the upper part of the draw-head and through the lock, the lock having 85 a guide slot to loosely receive said side lift lever and permit raising of the lock by the rotation of the lever.

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