G. A. HERMANSON.

CAR COUPLING.

APPLICATION FILED JAN. 30, 1909.

1,069,419.

Patented Aug. 5, 1913.

2 SHEETS—SHEET 1.

Fig. 1

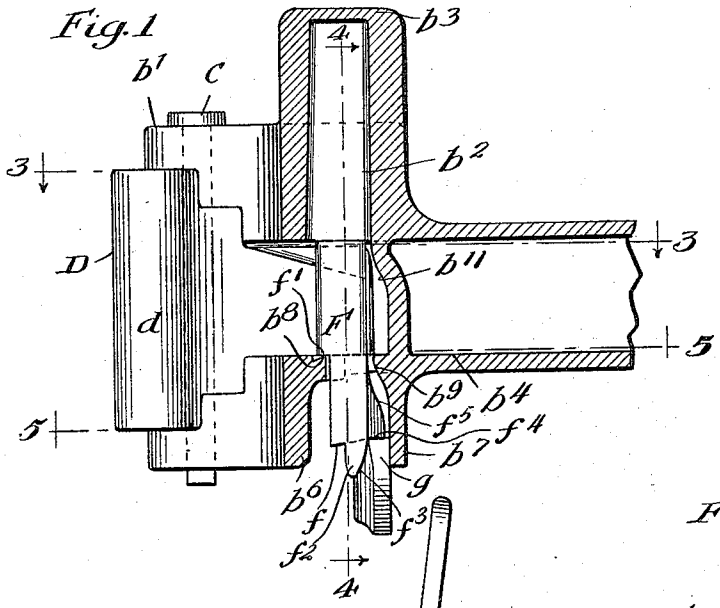


Fig. 2

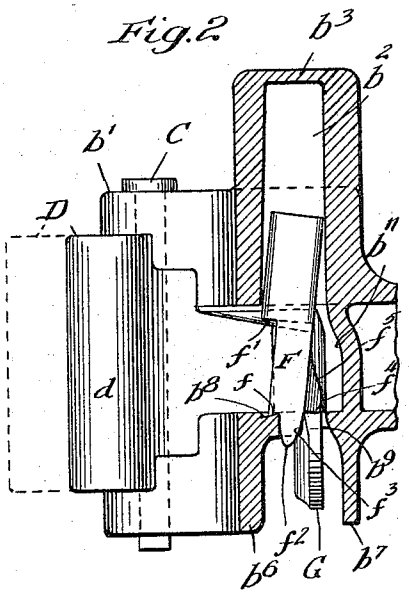
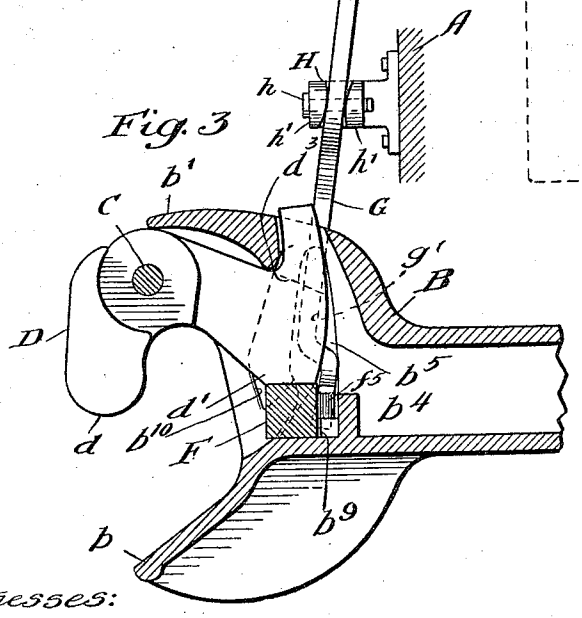


Fig. 3



Witnesses:

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2 SHEETS—SHEET 2.

Fig. 4

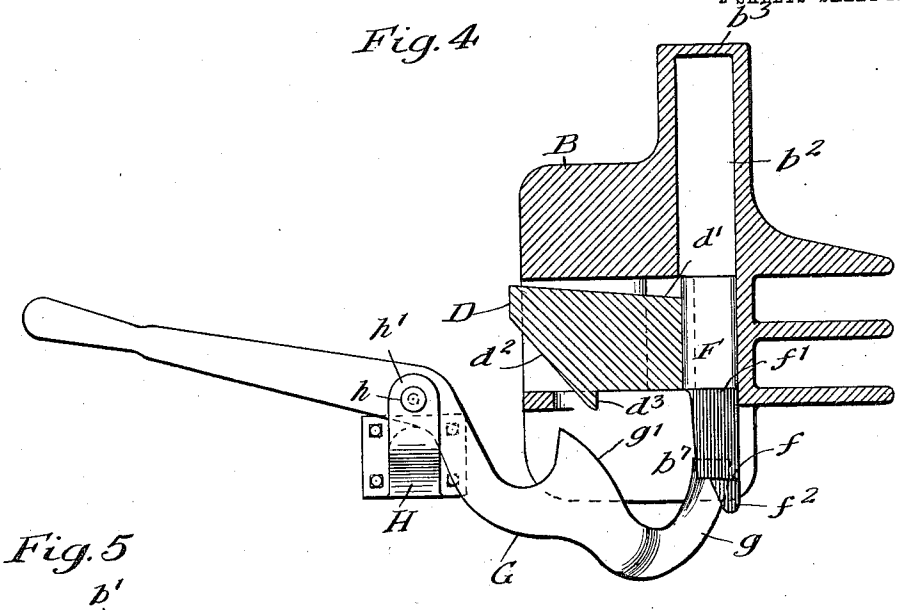


Fig. 5

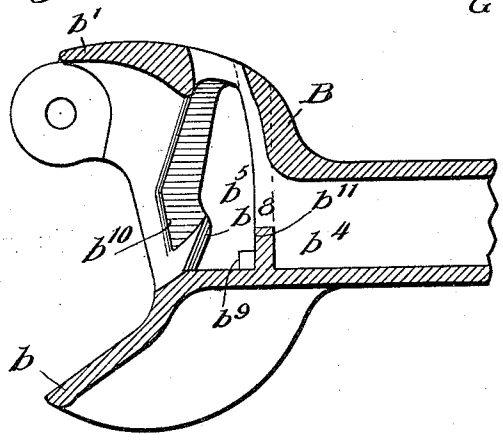


Fig. 7

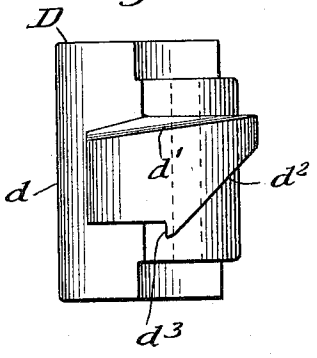


Fig. 6

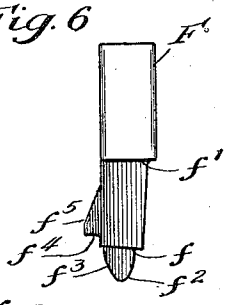
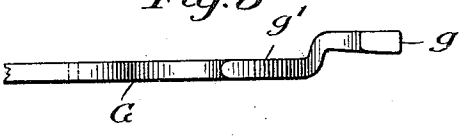


Fig. 8



Witnesses:

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UNITED STATES PATENT OFFICE.

GUSTAF A. HERMANSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE NATIONAL MALLEABLE CASTINGS COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

CAR-COUPLING.

1,069,419. Specification of Letters Patent. Patented Aug. 5, 1913.

Application filed January 30, 1909. Serial No. 475,252.

To all whom it may concern:

Be it known that I, GUSTAF A. HERMANSON, 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.

The object of my invention is to provide a car coupler, having a forked draw-head, vertically movable lock and pivoted knuckle of the Master Car Builders' type, which will be of a simple, efficient and durable construction, and have provision for setting the lock in position for uncoupling and for throwing the knuckle open, and in which the draw-head may have a closed housing over the upper end of the lock, and the lock be lifted from its lower end by a bottom lift lever mounted on the front end of the car and extending to the side thereof.

My invention consists in the means I employ to practically accomplish this object or result. That is to say, it consists in a car coupler comprising in combination, a draw-head having in its bottom web or floor a lock-set ledge and a guide or cam to guide the lock into engagement with said lock-set ledge when it is lifted, a knuckle having a rear arm or tail furnished with a knuckle throwing incline on its lower face, a lock having a lock-set shoulder near its lower end adapted to engage said lock-set ledge on the draw-head, and a further shoulder adapted to ride on the tail of the knuckle, and a bottom lift lever pivotally mounted on the front end of the car and extending to the side thereof, preferably just adjacent to the front sill of the car, and provided with a lifting arm adapted to engage the lower end of the lock, and also furnished with a knuckle throwing incline or arm adapted to engage the tail of the knuckle to throw the knuckle open; said bottom lift lever swinging vertically on its pivot to raise the lock and also swinging horizontally to accommodate or allow for the longitudinal movement of the draw-head and draw-bar in respect to the car frame; the lifting arm of said bottom lift lever engaging the guide cam on the draw-head to swing or guide the lock-set shoulder of the lock onto the lock-set ledge of the draw-head.

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 claim.

In the accompanying drawing forming a part of this specification, Figure 1 is a central, vertical, longitudinal section of the car coupler embodying my invention. Fig. 2 is a similar view of the lock on its lock-set position. 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 horizontal section on line 5—5 of Fig. 1. Fig. 6 is a detail view of the lock. Fig. 7 is a detail view of the knuckle and Fig. 8 is a detail plan view of the lifting lever.

In the drawing, A represents the front sill of the car, B the draw-head, C the pivot pin, D the knuckle, F the lock and G the bottom lift lever extending laterally or transversely to the side of the car at the front end thereof and pivotally connected thereto by the bracket H.

The draw-head B has the customary guard arm b and pivot arm b^1 through the upper and lower lugs of which the pivot pin C extends to pivotally connect the knuckle D with the draw-head. The draw-head B has a closed socket or cavity b^2 to receive the lock, in which the lock is adapted to move up and down, the upper end of this lock socket being closed by the integral housing portion b^3 of the draw-head. The draw-head is further provided in its bottom web or floor b^4 with a transversely extending slot or passage b^5 for the bottom lift lever to swing in, and with depending vertical guard webs or flanges b^6 b^7 to protect and house the inner end of the vertically swinging bottom lift lever. The draw-head is further provided with a lock-set ledge or shoulder b^8 adapted to engage the lock-set shoulder f of the lock, and thus support the lock in position for uncoupling. The draw-head B is further provided with a guide cam or incline b^9 adapted by engagement with the lifting arm g of the bottom lift lever to guide or swing the lower end of the lock forward as it is lifted, so that its lock-set shoulder f will properly engage the lock-set ledge b^8 of the draw-head.

The knuckle D has the customary front arm or nose d and rear arm or tail d^1, which

is furnished on its under side with a knuckle throwing cam or incline d^2, and also with a stop shoulder d^3 adapted to engage a corresponding stop shoulder b^{10} on the draw-head to limit the outward or opening movement of the knuckle.

The lock F is preferably square or rectangular in cross section, and is adapted to move up and down in the lock socket of the draw-head, and is provided with a lock-set shoulder f near its lower end adapted to engage the lock-set ledge b^8 of the draw-head and support the lock in position for uncoupling. The lock F is further provided with a shoulder f^1 adapted to engage and ride upon the rear arm or tail of the knuckle and thus support the lock in position for coupling as the knuckle swings into its closed position. The lock F is further provided at its lower end with a guide extension f^2 having an inclined rear face f^3 to guide the upper end of the lifting arm of the bottom lift lever against the shoulder or projection f^4 at the lower end of the lock. The lock F is further provided with a cam or incline f^5 on its rear face near its lower end which, by engagement with a cam or incline b^{11} on the draw-head tends to throw the lower end of the lock forward as it is lifted, and thus cause its upper shoulder f^1 to properly engage the tail of the knuckle and support the lock in position for coupling.

The bottom lift lever G extends laterally or transversely to the side of the car at the front end thereof, and is pivotally connected thereto by a support or lifting-lever bracket H, preferably attached to the front sill of the car, and having a pivot pin h extending through lugs h^1 between which the lifting lever loosely fits so that it may not only swing vertically on its pivot pin h as required for lifting the lock, but also swing horizontally between said lugs h^1 to the extent necessary to accommodate the longitudinal or backward and forward movement of the draw-bar in respect to the car frame. The bottom lift lever G is furnished with a lifting arm g adapted to engage the shoulder f^4 near the lower end of the lock to lift the lock and also to engage the cam or incline b^9 on the draw-head to swing the lower end of the lock slightly forward and thus cause its lock-set shoulder f to properly engage the lock-set ledge b^8 of the draw-head. The bottom lift lever G is further provided with a knuckle throwing cam, incline or curved arm g^1 which engages the knuckle throwing cam or incline d^2 on the under face of the rear arm d^1 of the knuckle D and thus operates to throw the knuckle open.

The lifting arm of the bottom lift lever first engages the lower end of the lock and raises the same sufficiently to permit the knuckle to open, and then the further upward movement of the inner end of the bottom lift lever G causes its knuckle throwing arm g^1 to engage the knuckle throwing incline on the tail of the knuckle and thus automatically throw the knuckle open.

I claim:—

In a car coupler, the combination with a draw-head, knuckle and lock, of a pivotally mounted bottom lift lever for the lock adapted to vibrate horizontally to allow for longitudinal movement of the coupler, said draw-head having a lock setting guide cam b^9 for the lifting arm of the lever, said knuckle having a rear arm or tail furnished with a knuckle throwing incline, said lock having a depending guide extension f^3, and said bottom lift lever having a lifting arm g adapted to engage the lower end of the lock to lift the same, and a knuckle throwing incline engaging the knuckle throwing incline on the tail of the knuckle to throw the knuckle open upon a continued upward movement of the lift lever.

GUSTAF A. HERMANSON.

Witnesses:
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