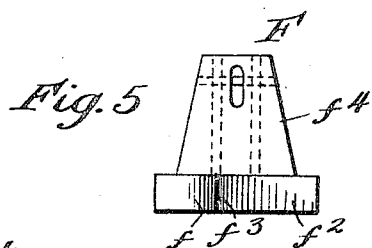
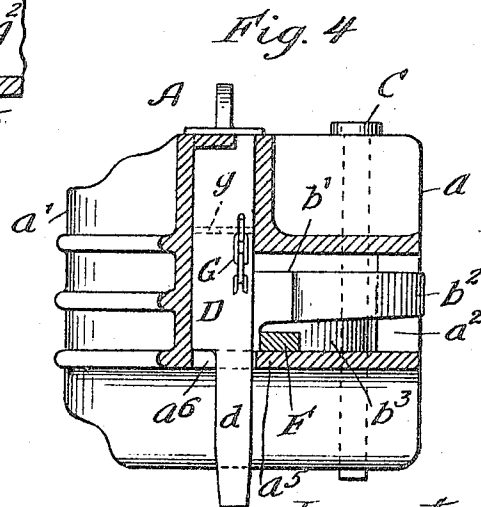
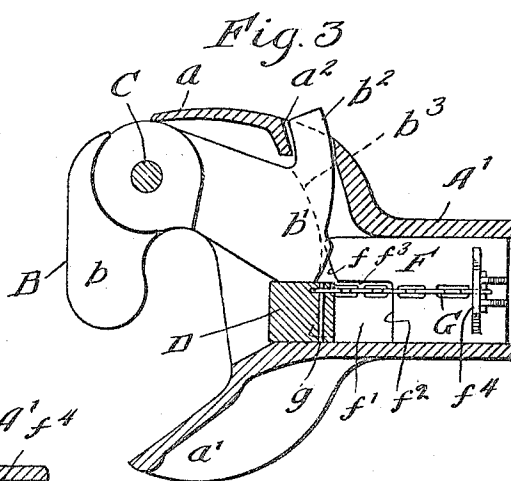
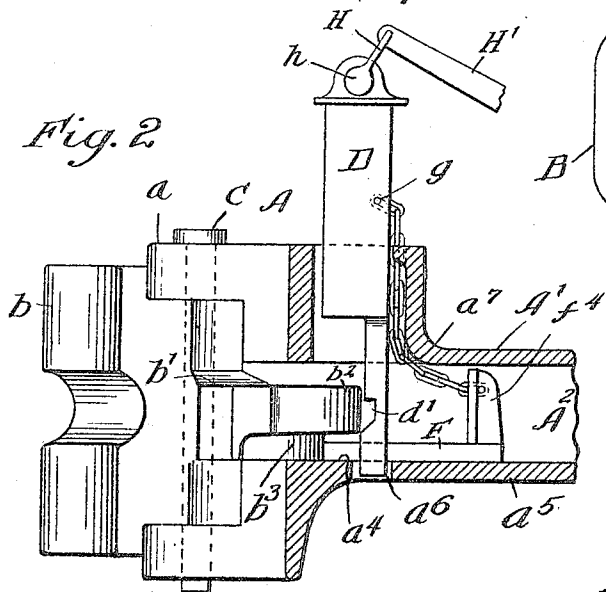
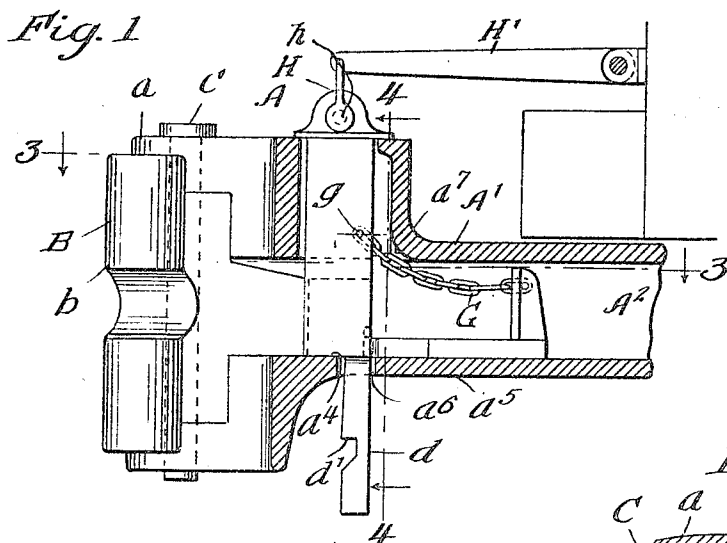


G. A. HERMANSON.
CAR COUPLING.

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Witnesses:

Wm. Geiger
P. Abrams.

Inventor.
Gustaf A. Hermanson
By Munday, Ewart & Adcock,
Attorneys

UNITED STATES PATENT OFFICE.

GUSTAF A. HERMANSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO JAMES MUNTUN, OF MAYWOOD, ILLINOIS.

CAR-COUPLING.

No. 801,869.

Specification of Letters Patent.

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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 of the Master Car-Builders' type or of the type having a forked draw-head, pivoted knuckle, and gravity-lock.

The object of my invention is to provide a car-coupler of a simple, strong, efficient, and durable construction having means for setting the lock in position for coupling and uncoupling and a knuckle-thrower or device for automatically swinging or throwing the knuckle open.

My invention consists, in connection with the forked draw-head and hollow or chambered draw-bar, a pivoted knuckle, and a vertically-movable gravity locking-pin having a locking ledge or shoulder adapted to engage a lock-set ledge or shoulder on the draw-head and preferably on the bottom web or floor of the draw-head, of a horizontally-sliding knuckle-thrower mounted to reciprocate in the chamber of the draw-bar and adapted to engage a cam or curved face on the tail or rear arm of the knuckle, and thus operate to throw the knuckle open when the locking-pin is lifted to the required extent, and a flexible connection between the horizontally-sliding knuckle-thrower and the locking-pin, said flexible connection being attached to the locking-pin in such position or relation to its lifting-clevis as to cause the strain or pull of the knuckle-thrower to tilt the lower end of the locking-pin forward, and thus insure the engagement of the lock-set ledge thereon with the lock-set ledge on the draw-head.

My invention also consists, in connection with the draw-head, draw-bar, knuckle, and locking-pin, of a horizontally-sliding knuckle-thrower in the chamber of the draw-bar and a flexible connection between the knuckle-thrower and the locking-pin to cause the knuckle-thrower to engage the tail or rear arm of the knuckle and throw it open when the lock is lifted to the required extent.

My invention also consists in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown or described.

In the accompanying drawings, 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 locking-pin in its raised position and the knuckle-thrower opened by the horizontally-sliding knuckle-thrower. Fig. 3 is a horizontal section on the broken line 3 3 of Fig. 1. Fig. 4 is a cross-section on line 4 4 of Fig. 1, and Fig. 5 is a detail front view of the knuckle-thrower.

In the drawings, A represents the forked draw-head of a car-coupler, having the customary pivot-arm *a*, guard-arm *a'*, and integral draw-bar *A'*, provided with the usual hollow chamber *A*².

B is the knuckle, pivotally connected to the draw-head by the pivot-pin C and having the usual front arm or nose *b* and rear arm or tail *b'*, which is preferably furnished with the customary safety-hook *b*², adapted to engage the corresponding lock or projection *a*² of the draw-head. The rear arm or tail *b'* of the knuckle is also furnished with a curved rear face or cam *b*³ for engagement with the horizontally-sliding knuckle-thrower F, which is mounted to reciprocate in the chamber *A*² of the draw-bar *A'*.

D is a vertically-movable gravity locking-pin, the same being furnished with a lock-set leg *d* at its lower end having a lock-set ledge *d'*, adapted to engage the corresponding lock-set ledge *a*⁴ on the draw-head, and preferably on the bottom web or floor *a*⁵ of the draw-head, through an opening *a*⁶, in which the lock-set leg *d* extends.

The horizontally-sliding knuckle-thrower F reciprocates longitudinally in the chamber of the draw-bar *A'* and is connected by a flexible connection G, preferably a chain, with the locking-pin D, so that when the lock is lifted beyond the extent necessary to unlock the knuckle or permit it to swing open the knuckle-thrower F will be reciprocated forward into engagement with the cam or curved rear face *b*³ of the knuckle-tail, and thus throw the knuckle open. The knuckle-thrower F is preferably furnished with a slightly rounded and inclined nose *f* to engage the knuckle-tail, so that when the cars are coupled and the knuckle swings into its closed position it will operate to push the knuckle-thrower back to its normal position, as indicated in Figs. 1 and 2. The knuckle-thrower F is provided with a notch *f'* to receive or accommodate the lock D or its lock-

set leg d when the knuckle-thrower is in its forward or advanced position. The shoulders f^2, f^3 , formed by the notch f' , also serves as a guide for the locking-pin or its lock-set

5 leg d .

The flexible connection G is attached at its lower end to a bracket or arm f^4 on the horizontally-sliding knuckle-thrower F and extends around a curved shoulder or guide a^7 , which is provided on the draw-head for this purpose, and it is attached at its upper end to the lock D by a pin g at a point to the rear of the pivot h of the lifting-clevis H, so that when the locking-pin is lifted through its operating-lever H' the pull of the knuckle-thrower on the locking-pin will tend to tilt the lower end of the locking-pin forward, and thus cause the lock-set ledge d' to positively and properly engage the lock-set ledge a^4 on the draw-head, and thus set the lock in position for uncoupling, when the coupled cars are subsequently separated.

When the cars are coupled together and the knuckles of two connecting-couplers are closed, so that the lifting of the lock to uncouple the cars cannot cause the knuckle-thrower to swing the knuckle open, and it is desired to lift the lock to uncoupling position and set it in that position, so that the cars can be subsequently separated and the knuckle to swing open, it will be understood that the tail of the closed knuckle prevents the knuckle-thrower from sliding farther forward after it engages the tail of the closed knuckle; but the strain of the operating-lever H' on the lock D and of the flexible connection G on the lock, the knuckle-thrower F being stopped from further movement, causes the lower end of the lock or its lock-set leg d to be positively tilted forward into position for proper engagement of its lock-set ledge d' with the lock-set ledge a^4 on the draw-head.

I claim—

45 1. In a car-coupler, the combination with the draw-head and chambered draw-bar, of a knuckle having a tail or rear arm furnished with a cam-face, of a horizontally-sliding knuckle-thrower in the chamber of the draw-
50 bar adapted to engage the cam-face of the knuckle-tail, a vertically-movable locking-pin having a lock-set leg and lock-set ledge thereon, an operating-lever and clevis for lifting the locking-pin, and a flexible connection between the locking-pin and said horizontally-sliding knuckle-thrower attached to the locking-pin to the rear of its lifting-clevis to cause said flexible connection to tilt the locking-pin forward at its lower end and cause its lock-set ledge to engage a lock-set ledge on the draw-head, said draw-head being provided with a lock-set ledge for engagement with said lock-set ledge on the locking-pin, substantially as specified.

65 2. In a car-coupler, the combination with a

draw-head and chambered draw-bar, of a knuckle, a locking-pin, a horizontally-sliding knuckle-thrower reciprocating in the chamber of the draw-bar, and a flexible connection between the locking-pin and the sliding
70 knuckle-thrower, substantially as specified.

3. In a car-coupler, the combination with a draw-head and chambered draw-bar, of a knuckle, a locking-pin, a horizontally-sliding knuckle-thrower reciprocating in the chamber of the draw-bar, a flexible connection between the locking-pin and the sliding knuckle-thrower, the tail or rear arm of the knuckle having a cam-face for engagement with the knuckle-thrower, substantially as specified.

4. In a car-coupler the combination with a draw-head and chambered draw-bar, of a knuckle, a locking-pin, a horizontally-sliding knuckle-thrower reciprocating in the chamber of the draw-bar, a flexible connection between the locking-pin and the sliding knuckle-thrower, the tail or rear arm of the knuckle having a cam-face for engagement with the knuckle-thrower, and said knuckle-thrower having an inclined face to engage the cam-face on the knuckle-tail, substantially as specified.

5. In a car-coupler, the combination with a draw-head and chambered draw-bar, of a knuckle, a locking-pin, a horizontally-sliding knuckle-thrower reciprocating in the chamber of the draw-bar, and a flexible connection between the locking-pin and the sliding knuckle-thrower, said knuckle-thrower having a notch therein to accommodate the locking-pin, substantially as specified.

6. In a car-coupler, the combination with a draw-head and chambered draw-bar, of a knuckle, a locking-pin, a horizontally-sliding knuckle-thrower reciprocating in the chamber of the draw-bar, and a flexible connection between the locking-pin and the sliding knuckle-thrower, said knuckle-thrower having an inclined face or nose for engagement with the knuckle-tail, substantially as specified.

7. In a car-coupler, the combination with a draw-head and draw-bar, of a knuckle having a tail or rear arm furnished with a curved or cam-shaped rear face, of a horizontally-sliding knuckle-thrower in the chamber of the draw-bar, a vertically-movable locking-pin, and a flexible connection between the locking-pin and the sliding knuckle-thrower, said locking-pin having a lock-set ledge adapted to engage the floor or bottom web of the draw-head, and the pull of the locking-pin on said sliding knuckle-thrower operating to tilt the locking-pin to insure the engagement of the lock-set ledge thereon with the floor or bottom wall of the draw-head, substantially as specified.

GUSTAF A. HERMANSON.

Witnesses:

H. M. MUNDAY,

EDMUND ADCOCK.