

No. 830,714.

PATENTED SEPT. 11, 1906.

G. A. HERMANSON.
CAR COUPLING.

APPLICATION FILED APR. 2, 1906.

2 SHEETS—SHEET 1.

Fig. 1

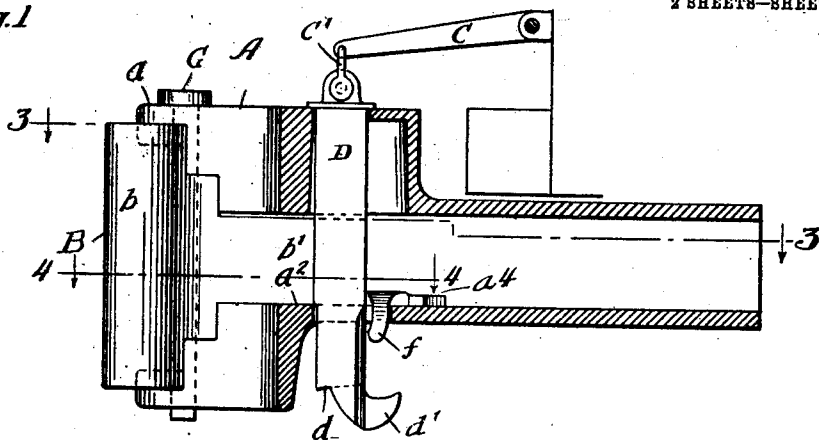


Fig. 2

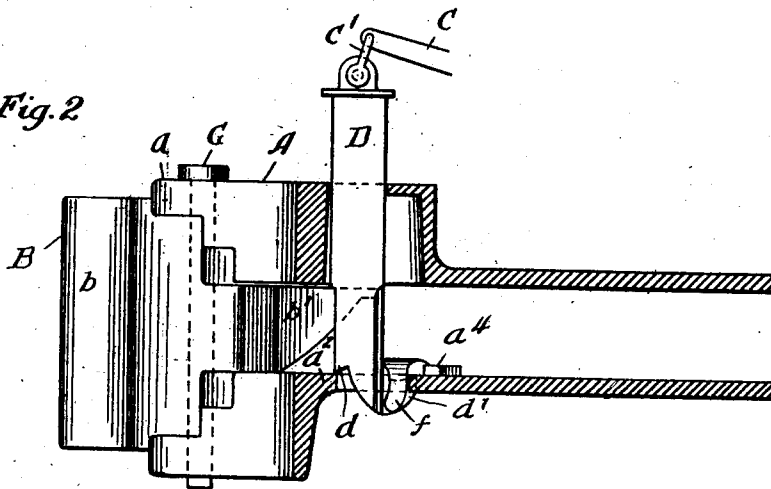
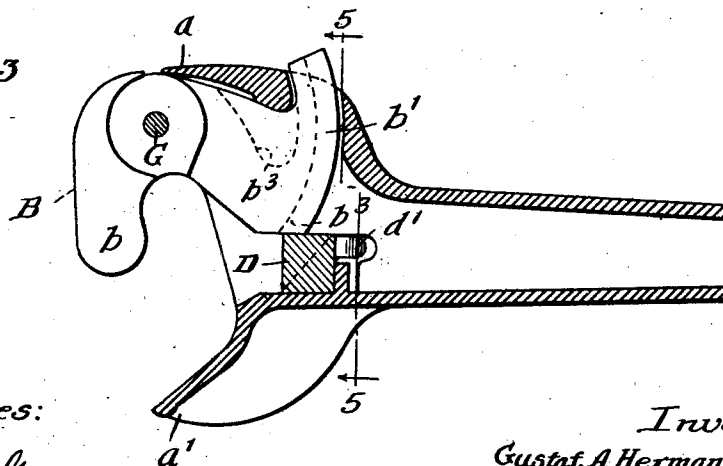


Fig. 3



Witnesses:

Wm. Geiger
J. W. Munday

Inventor:

Gustaf A. Hermanson

By Munday, Coats & Adcock
Attorneys

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2 SHEETS—SHEET 2.

Fig. 4

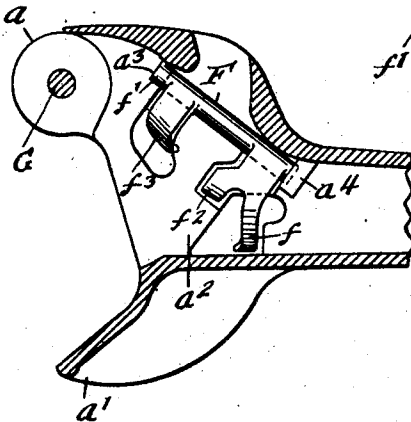


Fig. 6

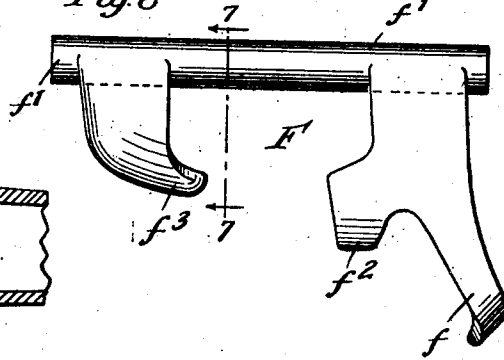


Fig. 5

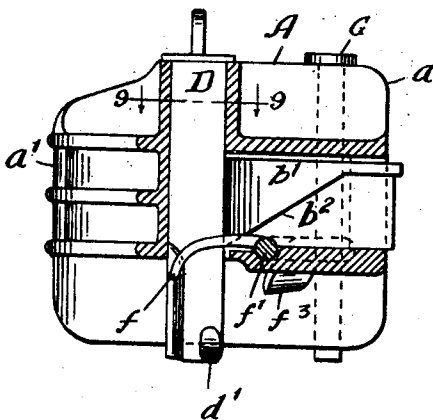


Fig. 7

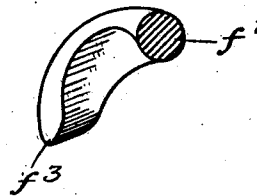


Fig. 8

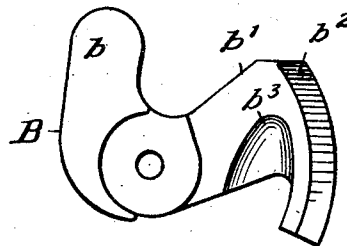
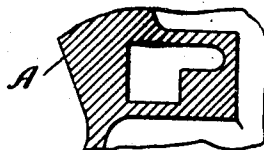


Fig. 9



Witnesses:

Wm. Suiger
J. W. Munday

Inventor:

Gustaf A. Hermanson

By Munday, Evans & Adcock.

Attorneys

UNITED STATES PATENT OFFICE.

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

CAR-COUPLING.

No. 830,714.

Specification of Letters Patent.

Patented Sept. 11, 1906.

Application filed April 2, 1906. Serial No. 309,250.

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 having a forked draw-head, pivoted knuckle, and vertically-movable lock, and more particularly to improvements in devices for automatically throwing the knuckle open when the lock is lifted to the required extent.

In knuckle-throwers heretofore in use considerable difficulty is experienced in practical operation owing to the fact that the vertical movement of the lock is necessarily quite limited in extent, while the horizontally-swinging movement of the knuckle-tail is necessarily considerable in extent or through a considerable arc, so that the knuckle-thrower necessarily operates at a disadvantageous leverage through all or a greater portion of the knuckle-opening movement, thus causing the knuckle to be opened with difficulty, especially when the movement of the knuckle is obstructed by sand or cinders or other things.

The object of my invention is to provide a car-coupler with a knuckle-thrower of a simple, efficient, and durable construction, of which the knuckle may be readily and conveniently opened without undue strain.

My invention consists in the means I employ to practically accomplish this result—that is to say, it consists, in connection with the draw-head of the coupler, of a knuckle furnished with a plurality of cams or inclines adapted to be engaged by a knuckle-thrower and a knuckle-thrower having a plurality of knuckle-throwing arms one in advance of the other and adapted to engage one after the other the knuckle-throwing cams or inclines on the inner arm or tail of the knuckle, the knuckle-thrower also having an operating-arm engaged by the lock when the lock is raised.

My invention also 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 drawings, forming a part of this specification, Figure 1 is a vertical

longitudinal section of a car-coupler embodying my invention. Fig. 2 is a similar view showing the lock partially raised. Fig. 3 is a horizontal section on the broken line 3 3 of Fig. 1. Fig. 4 is a detail horizontal section on the line 4 4 of Fig. 1 with the knuckle and lock removed. Fig. 5 is a section on line 5 5 of Fig. 3. Fig. 6 is an enlarged detail plan view of the knuckle-thrower. Fig. 7 is a section on line 7 7 of Fig. 6. Fig. 8 is a detail bottom view of the knuckle, and Fig. 9 is a detail section on line 9 9 of Fig. 5.

In the drawings, A represents the draw-head of the coupler, having the customary pivot-arm *a* and guard-arm *a'*.

B is the knuckle, having the customary front arm or nose *b* and rear arm or tail *b'*.

C is the lifting-lever, by which the lock D is raised, the same being connected to the lock by a clevis *C'*. The lock D is furnished with a lock-set ledge or shoulder *d*, adapted to engage a lock-set ledge or shoulder *a²* on the floor of the draw-head and to hold the lock in position for uncoupling. The lock also has a lock-set ledge adapted to engage the upper face of the rear arm or tail of the knuckle, and thus set or hold the lock in position for uncoupling. The lock D is also provided near its lower end with a foot or projection *d'*, adapted to engage the operating-arm *f* of the knuckle-thrower F, when the knuckle is raised to the required extent.

The knuckle-thrower F is mounted in the floor of the draw-head and in suitable recesses or bearings *a³ a⁴*, which receive the shaft portion *f'* of the knuckle-thrower, and thus permit it to have a rocking movement when its operating-arm *f* is engaged by the foot or projection *d'* on the lock D. The knuckle-thrower F has two knuckle-throwing arms *f² f³*, the former being in advance of the other or adapted to engage the tail of the knuckle in advance of the other and also adapted to engage it farther from the radial pivot-pin G of the knuckle, so as to operate upon the knuckle with an increased leverage. The tail *b'* of the knuckle is provided with two cams or inclines, one, *b²*, engaged by the knuckle-throwing arm *f²*, and the other, *b³*, engaged by the knuckle-throwing arm *f³*. After the initial opening movement of the knuckle has been imparted to it by the operating-arm *f²*, which engages the tail of the knuckle at a considerable distance from the

pivot of the knuckle, so as to start the opening movement of the knuckle with considerable purchase or leverage the opening movement may be easily continued to the desired
5 or required extent by the second operating-arm³ of the knuckle-thrower, which engages the tail of the knuckle nearer to its pivot center, and is thus adapted to impart to it an increased extent of movement, as after the
10 knuckle has once been started in its opening movement the movement can then ordinarily be continued without great force. As in my invention the knuckle-thrower is mounted on the bottom web or floor of the
15 draw-head, it is entirely out of the way and not liable to be injured or broken by sudden jamming of the knuckle into its closed position.

I claim—

20 1. In a car-coupler, the combination with a draw-head, of a knuckle, a pivot for the knuckle, a lock, and a knuckle-thrower furnished with a plurality of knuckle-throwing

arms, one in advance of the other, and provided with an operating-arm, the lock having a projection engaging said operating-arm of the knuckle-thrower, substantially as specified.

2. In a car-coupler, the combination with a draw-head, of a pivoted knuckle, a vertically-movable locking-pin, and a rocking
30 knuckle-thrower mounted in the floor of the draw-head, the knuckle having two inclines for engagement with arms on the knuckle-thrower, the lock having an arm for engagement
35 with the operating-arm on the knuckle-thrower, and the knuckle-thrower being provided with an operating-arm and with two knuckle-throwing arms arranged one in
40 advance of the other for engagement with the inclines on the knuckle, substantially as specified.

GUSTAF A. HERMANSON.

Witnesses:

EDMUND ADCOCK,
H. M. MUNDAY.