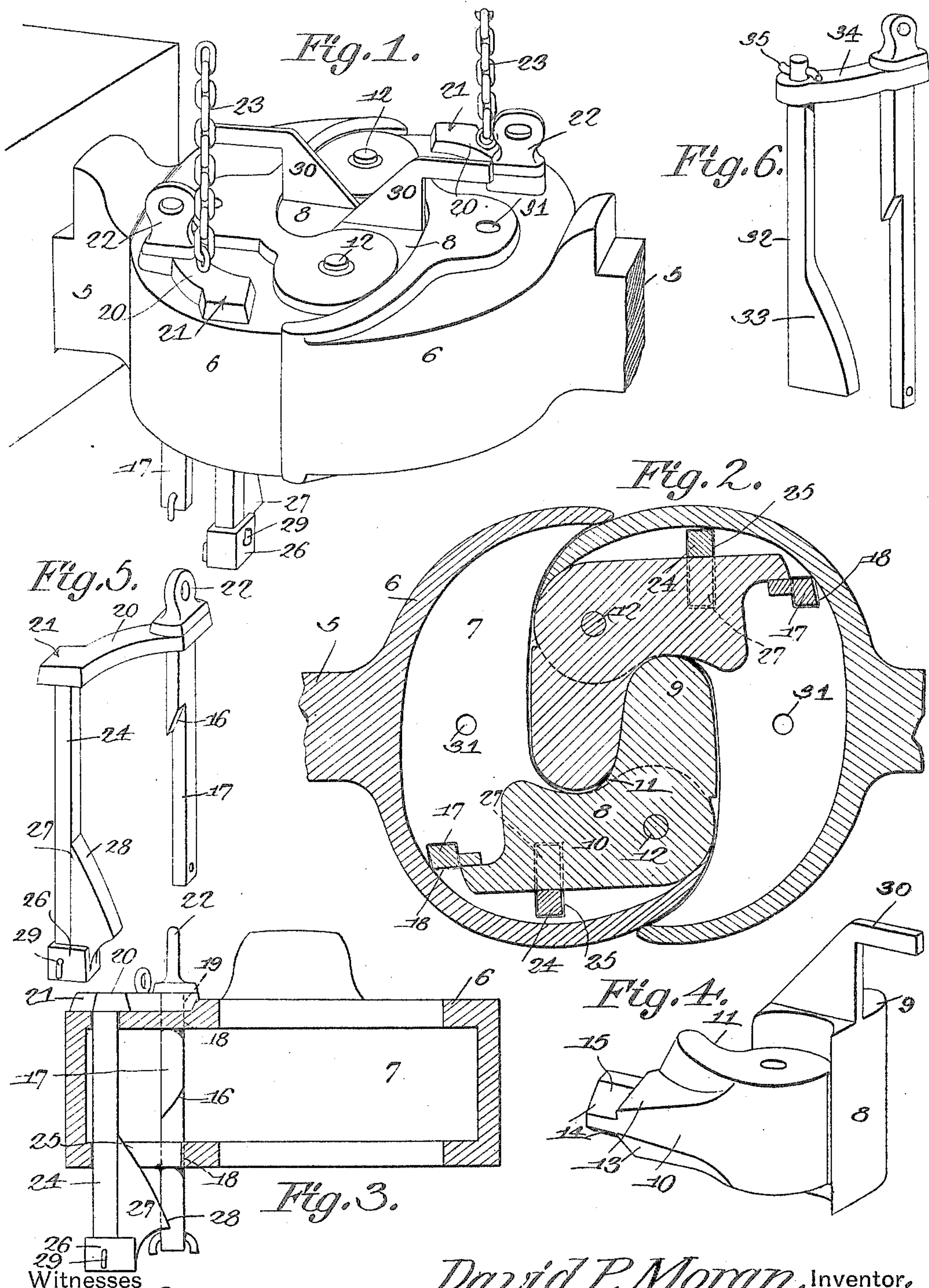


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D. P. MORAN.
CAR COUPLING.

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UNITED STATES PATENT OFFICE.

DAVID P. MORAN, OF WICHITA, KANSAS.

CAR-COUPLING.

No. 804,424.

Specification of Letters Patent.

Patented Nov. 14, 1905.

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To all whom it may concern:

Be it known that I, DAVID P. MORAN, a citizen of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented a new and useful Car-Coupling, of which the following is a specification.

This invention relates to car-couplers of the "Janney" type, and has for its object to improve, simplify, and cheapen the construction of such devices, whereby their efficiency is materially increased.

A further object of the invention is to provide novel means for locking the pivoted knuckle in coupled position and means for moving said knuckle to open position when the locking-pin is released.

A further object is to provide a knuckle-opener having a cam-face for engagement with the rear end of the knuckle, said opener being provided with a laterally-extended slotted arm in which is mounted for vertical movement the locking-pin, the latter being adapted to engage the tail portion of the knuckle and automatically lock the same in closed position when the cars are coupled.

A still further object of the invention is to provide means for simultaneously elevating the locking-pin and knuckle-opener and means for limiting the upward movement of the latter.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in form, proportions, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

In the accompanying drawings, forming a part of this specification, Figure 1 is a perspective view of a pair of couplers constructed in accordance with my invention, showing the same interlocked. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a transverse sectional view of one of the coupling-heads with the pivoted knuckle removed. Fig. 4 is a detail perspective view of one of the pivoted knuckles detached. Fig. 5 is a detail perspective view of the knuckle-opener and locking-pin detached, and Fig. 6 is a similar view showing a modified form of knuckle-opener and locking-pin.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, 5 designates the draw-bar, carrying the usual coupling-head 6, the latter being provided with an internal chamber or recess 7, in which is mounted for horizontal swinging movement the pivoted knuckle 8. The knuckle 8 is provided with the usual nose-piece 9 and angular extension 10, the inner face of the knuckle between said nose-piece and extension being formed with a curved or cam face 11, which lies in the path of the nose-piece on the knuckle of the adjacent coupling-head, so that when the cars are coupled said knuckle will be swung rearwardly on the pivot-pin 12 within the recess or chamber 7, and thereby automatically engage the mating or companion knuckle. The angular extension 10 of the pivoted knuckle is inclined or beveled, as indicated at 13, and is provided with a terminal locking-lug or tailpiece 14, which is also inclined or beveled, as shown at 15, for engagement with the correspondingly-inclined shoulder 16 of a vertically-movable locking-pin 17. The locking-pin 17 is mounted for vertical movement in aligned openings 18 in the coupling-head 6 and also passes through a similar opening 19, formed in the laterally-extending arm 20 of a knuckle-opener 21. The upper or operative end of the pin 17 slides loosely through the opening in the arm 20, so as to permit said pin to move independently of the knuckle-opener when desired, said pin being provided with a terminal head 22, to which may be attached a chain, lever, or other suitable device for elevating the pin. The head 22 normally rests upon the laterally-extending arm of the knuckle-opener, so that by exerting an upward pull on the operating-chain 23 of the arm 20 the pin and knuckle-opener may be simultaneously elevated for the purpose hereinafter explained. The knuckle-opener consists of a rod or bar 24, which passes through the chamber or recess in the coupling-head and to the upper end of which is secured the laterally-extending arm 20. The lower end of the rod 24 passes through a slot 25 in the lower wall of the coupling-head and is seated in the terminal socket 26 of a knuckle-ejecting member or cam 27, the inclined face 28 of which engages the correspondingly-inclined face of the angular extension 10 when the rod 24 is elevated, and thereby moves the pivoted

knuckle to open position. The rod 24 is detachably secured within the socket 26 by means of a pin 29, so that when the member 27 becomes worn or broken from constant wear the same may be quickly detached and replaced by a new one. Attention is here called to the fact that the socket 26 by engagement with the bottom of the coupling-head serves to limit the upward movement of the knuckle-opener, while the downward movement thereof is limited by engagement of the arm 20 with the top of said coupling-head.

Upon the top of the nose portion of each pivoted knuckle there is an elevated shoulder or projection 30, which extends in front of the nose so as to overhang the head of a mating or companion coupler, thereby to prevent the first-mentioned coupler from dropping down upon the track should the draw-bar become broken. The coupling-heads are also preferably provided with coincident perforations 31 for the reception of coupling-pins when the automatic coupler is associated with the ordinary pin-and-link coupling.

In practice when it is desired to uncouple the cars the locking-pin is elevated until the inclined shoulder clears the terminal lug or tailpiece of the pivoted knuckle, in which position the forward movement of the car will automatically swing the knuckle outwardly to open position, and thereby release the mating or companion knuckle. When the cars are uncoupled and it is desired to release the pivoted knuckle preparatory to coupling without the necessity of going between the cars, an upward pull is exerted on the cord or chain 23, which simultaneously elevates both the pin and knuckle-opener, the initial pull on the chain serving to elevate the locking-pin until the offset clears the locking-lug, and a continued pull causing the inclined face of the ejecting-cam to engage the corresponding inclined face of the extension of the knuckle, thereby moving the latter to open position.

In Fig. 6 of the drawings there is illustrated a modified form of the invention in which the rod 32 and the ejecting cam or member 33 are formed integral, said rod being detachably secured to the laterally-extending arm 34 by means of a pin or similar fastening device 35, this construction being also designed to permit the removal of the ejecting member when the same becomes worn or broken.

From the foregoing description it will be seen that there is provided a comparatively simple, inexpensive, and extremely efficient coupler admirably adapted for the attainments of the ends in view.

Having thus described the invention, what is claimed is—

1. In a car-coupling, the combination with a coupling-head having a recess formed therein, of a pivoted knuckle mounted for swinging movement within said recess and provided with a locking-lug, a knuckle-opener carried by the coupling-head and provided with a laterally-extending slotted arm, a vertically-slidable locking-pin adapted to engage the locking-lug and having its upper end passing through the slot in said arm and normally supported in operative position by the latter, said pin being movable to release position by the knuckle-opener and capable of independent vertical movement.

2. In a car-coupling, the combination with a coupling-head having a recess formed therein, of a pivoted knuckle mounted for swinging movement within said recess and provided with a locking-lug, a knuckle-opener carried by the coupling-head and provided with a detachable ejecting-cam, and a vertically-movable locking-pin adapted to engage the locking-lug and slidably mounted in the knuckle-opener, said pin being capable of independent vertical movement.

3. In a car-coupling, the combination with a coupling-head having a recess formed therein, of a pivoted knuckle mounted for swinging movement within said recess and provided with a locking-lug, a vertically-slidable locking-pin adapted to engage said lug for securing the knuckle in coupled position, a knuckle-opener comprising an ejecting-cam provided with a terminal socket, and a rod seated in said socket and provided with a laterally-extending arm having a slot formed therein for the reception of the locking-pin.

4. In a car-coupling, the combination with a coupling-head, of a pivoted knuckle mounted for swinging movement within said recess and provided with a locking-lug, a vertically-slidable locking-pin adapted to engage said lug for securing the knuckle in locked position, a rod extending through the recess of the coupling-head and provided at its upper end with a laterally-extending arm having a slot formed therein for the reception of the locking-pin, and a detachable ejecting-cam provided with a socket for the reception of the lower end of said rod, said socket serving to limit the upward movement of the rod.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

DAVID P. MORAN.

Witnesses:

J. H. JOCHUM, Jr.,
J. H. REID.