

(No Model.)

R. DINSMORE.
CAR COUPLING.

No. 542,608.

Patented July 9, 1895.

Fig. 1.

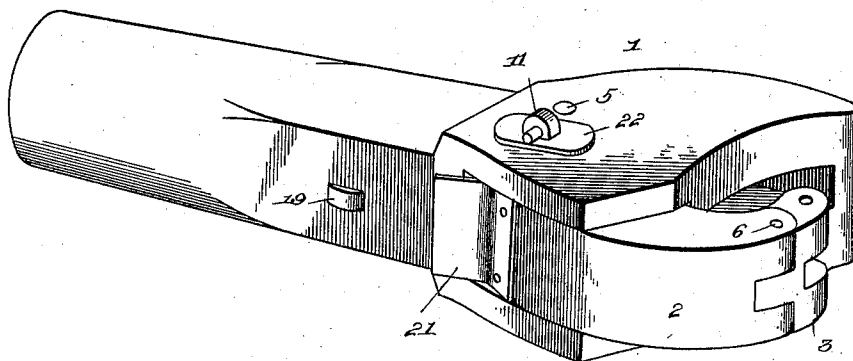


Fig. 2.

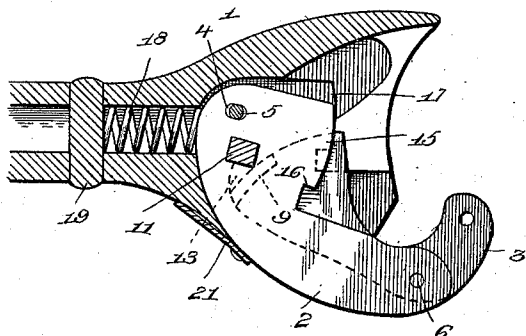


Fig. 3.

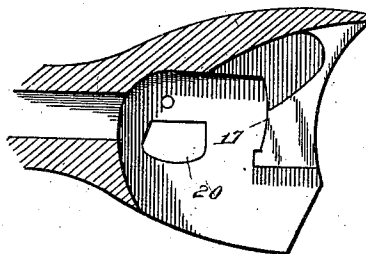


Fig. 4.

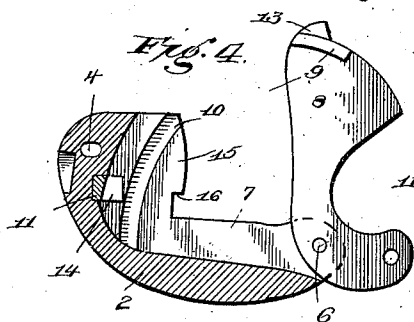
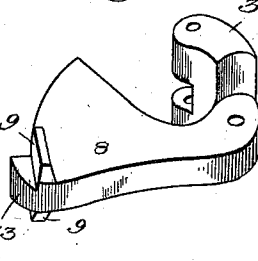


Fig. 6.



Fig. 5.



Inventor

Witnesses

John C. Shaw.
H. W. Clay

By his Attorneys,

Robert Dinsmore,

Cashnow & Co.

UNITED STATES PATENT OFFICE.

ROBERT DINSMORE, OF WESTON, WEST VIRGINIA, ASSIGNOR OF ONE-HALF
TO MORIS GREENSTEIN, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 542,608, dated July 9, 1895.

Application filed April 3, 1895. Serial No. 544,287. (No model.)

To all whom it may concern:

Be it known that I, ROBERT DINSMORE, a citizen of the United States, residing at Weston, in the county of Lewis and State of West Virginia, have invented a new and useful Car-Coupling, of which the following is a specification.

The invention relates to improvements in car-couplings.

The objects of the present invention are to improve the construction of car-couplings of the Janney type, to prevent cars from uncoupling in event of the breakage of a knuckle-pin, and to enable cars to couple automatically when the knuckle is closed and locked.

Another object of the invention is to prevent injury to the knuckle and knuckle-pin when cars come together in shifting and making up trains and when the knuckle is closed and locked, and to obviate the necessity and inconvenience of unlocking and opening knuckles preparatory to automatic coupling.

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.

In the drawings, Figure 1 is a perspective view of a car-coupling constructed in accordance with this invention. Fig. 2 is a horizontal sectional view of the same. Fig. 3 is a horizontal sectional view of the draw-head, the jaw and the knuckle being removed. Fig. 4 is a detail sectional view of the jaw and the knuckle. Fig. 5 is a detail perspective view of the knuckle. Fig. 6 is a similar view of the vertically-movable locking-bar.

Like numerals of reference designate corresponding parts in all of the figures of the drawings.

1 designates a draw-head having a horizontal opening and being open at one side, and having pivotally mounted in it a laterally-swinging jaw 2, projecting forward or outward from one side of the draw-head and carrying a knuckle 3. The jaw 2 is substantially L-shaped and the inner end of the rear portion or arm is provided with a perforation 4, receiving a pivoting-pin 5, mounted in the top and bottom of the draw-head.

The knuckle 3 is pivoted by a knuckle-pin

6 to the outer end of the jaw 2, and the latter is provided at its inner side with a horizontal longitudinal slot or opening 7, adapted to receive an inwardly-extending arm 8 of the knuckle 3. The outer engaging portion of the knuckle is provided with the usual link opening or slot and a coupling-pin perforation to enable the draw-head to be readily coupled with cars having the ordinary pin-and-link car-couplings.

In order to relieve the knuckle-pin of strain when the knuckle is closed to prevent the knuckle-pin from breaking, and to avoid accidental uncoupling in event of the breakage of the knuckle-pin, the inwardly-extending arm 8 is provided at its inner or rear end on its upper and lower faces with flanges or lugs 9, which are received in curved grooves 10 of the top and bottom walls of the longitudinal slot or opening 7 of the jaw 2. The grooves 10 are slightly curved to accommodate the swinging of the arm 8 as the lugs or flanges 9 thereof move in a curved path, and when the knuckle is closed and coupled the lugs 9 are interlocked with the grooves of the jaw and receive the strain incident to drawing a train of cars and relieve the knuckle-pin 6.

If the knuckle-pin 6 should break or become lost, the lugs 9 will secure the knuckle properly in position and prevent any accidental uncoupling or separation of cars.

The knuckle is locked in its closed position by the vertically-movable locking-bar 11, forming a catch and passing through corresponding openings of the draw-head and the jaw 2 and provided with a recess forming a beveled shoulder 12 at its upper end and adapted to permit a lug or projecting portion 13 of the inner end of the arm 8 of the knuckle to pass through it and engage the upper portion of the bar 11 when the latter is lowered or depressed after the projection or lug has passed it. The lug or projection 13 is beveled in order to lift the locking-bar automatically, and after such automatic lifting the locking-bar falls by gravity and automatically engages the shouldered portion of the projection 13. The vertical movement of the locking-bar may be limited by any suitable means, and the lower end of the recess thereof is beveled at

14 to facilitate the outward movement of the arm 8, and the locking-bar or catch may be connected with any suitable mechanism for enabling the operation of uncoupling to be performed from the top, sides, or platform of a car to avoid going between cars.

The jaw 2 is pivotally mounted in the draw-head and is adapted to swing laterally thereof to enable cars to couple automatically when the knuckle is closed and locked, and to avoid injury to the knuckles by bumping against them in shifting and making up trains. Should a knuckle come in contact with the knuckle 3 when the latter is closed and locked, the jaw 2 will swing outward laterally of the draw-head, as illustrated in Fig. 2 of the accompanying drawings, to permit the knuckles to pass each other and to interlock to effect the operation of coupling. This also prevents the injury to the knuckle and to the knuckle-pin which would result were the knuckle rigidly locked when closed against lateral movement. This also obviates the necessity of unlocking and opening knuckles preparatory to coupling and to prevent injury to them when it is desired to shift cars for making up trains and the like.

When the knuckle is closed and the jaw is in its normal position and is subjected to a longitudinal strain, as is the case when cars are coupled, the jaw is locked against accidental lateral swinging by being interlocked with the draw-head. The arm of the jaw is provided with a projection or extension 15, forming a square shoulder 16 at the top and bottom of the jaw, and the draw-head is provided at the inner faces of its top and bottom with recesses 17, conforming to the configuration and the extension or projection 15 of the arm of the jaw and adapted to receive the same when the jaw is in its normal position. The jaw is normally held in engagement with the top and bottom of the draw-head by a spiral spring 18, interposed between the back of the jaw and a key or fastening device 19, extending transversely of the draw-bar or shank of the draw-head. When cars come together for coupling, the pressure occasioned by such contact forces the jaw inward or backward against the action of the spring 18, thereby disengaging the extension 15 of the arm of the jaw from the recesses of the draw-head and causing the jaw to yield laterally against the action of the spring 18 to permit the knuckles to pass each other. The rounding of the outer ends of the knuckles provides sufficient beveling to cause the jaw to be forced laterally, so that the knuckles will pass each other, and as soon as the pressure is withdrawn from the jaw the latter will return to its normal position and become interlocked with the draw-head.

The perforation 4 of the arm of the jaw is elongated or enlarged to permit a limited longitudinal movement of the jaw sufficient for the same to engage and disengage the recesses of the draw-head, and the openings 20 of the

top and bottom of the draw-head are slightly enlarged and curved at one side to permit a limited swinging movement of the locking-bar 11. A plate 21 is secured to the outer face of the jaw and overlaps the adjacent portion of the draw-head to exclude anything which might clog the draw-head and interfere with the operation of the jaw. The opening 20 of the top of the draw-head is covered by a plate 22 arranged on the locking-bar and adapted to prevent dust, water, snow, or the like accumulating in the draw-head. The front end of the spring 18 fits in a socket of the rear end of the jaw.

It will be seen that the car-coupling is simple and inexpensive in construction, that it is positive and reliable in operation, and that it is capable of coupling automatically when the knuckle is closed and locked. It will also be apparent that it obviates the necessity of going between cars, that it prevents injury to the knuckle and knuckle-pin when cars come in contact with the knuckles closed and locked, and that it obviates the necessity of unlocking and opening knuckles preparatory to coupling. Furthermore, it will appear that the knuckle-pin is relieved of strain, and that cars cannot accidentally become separated and uncoupled in event of the breakage or loss of the knuckle-pin.

When the jaw and the knuckle are subjected to the usual longitudinal strain there is comparatively little pressure exerted by the arm of the knuckle on the locking-bar, and the latter may be readily raised to effect the operation of uncoupling while a train is running at full speed. This will enable what is known as a "flying switch" to be made to facilitate the making up of trains, shifting, and the like.

Other objects and advantages of the invention will be readily understood and appreciated by those skilled in the art to which this invention appertains, and I desire to be understood that changes in the form, proportion, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention.

What I claim is—

1. In a car coupling, the combination of a draw-head, a pivoted knuckle, a jaw mounted on the draw-head and projecting outward from the front of the draw-head and having the knuckle mounted on its outer end, and arranged to swing laterally of the draw-head to permit the knuckle to pass another, whereby two draw-heads may couple automatically when the knuckles thereof are locked, and means for locking the knuckle in its closed position, substantially as described.

2. In a car coupling, the combination of a draw-head, a laterally movable jaw pivotally mounted on the draw-head, and capable of a limited longitudinal movement, and interlocking with the draw-head when at the limit of its forward movement, a knuckle pivoted

to and carried by the jaw, and means for locking the knuckle when closed, substantially as described.

3. In a car coupling, the combination of a
5 draw-head, provided in its top and bottom walls with recesses, a laterally movable jaw pivotally mounted in the draw-head, and capable of a limited longitudinal movement, and inter-locking with the said recesses when
10 at the limit of its forward movement, a spring for holding the jaw normally in engagement with said recesses, a knuckle pivoted to and carried by the jaw, and means for locking the knuckle, when closed, substantially as
15 described.

4. In a car coupling, the combination of a draw-head, a jaw having a longitudinal slot or

opening, and provided in the upper and lower walls thereof with grooves, and a knuckle pivoted to the jaw and having an arm arranged
20 to swing in the opening or slot, and provided with lugs, inter-locking with the grooves thereof, whereby the knuckle-pin is relieved of strain, and the knuckle is prevented from leaving the draw-head, substantially as de-
25 scribed.

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

ROBERT DINSMORE.

Witnesses:

JOHN H. SIGGERS,
HAROLD H. SIMMS.