

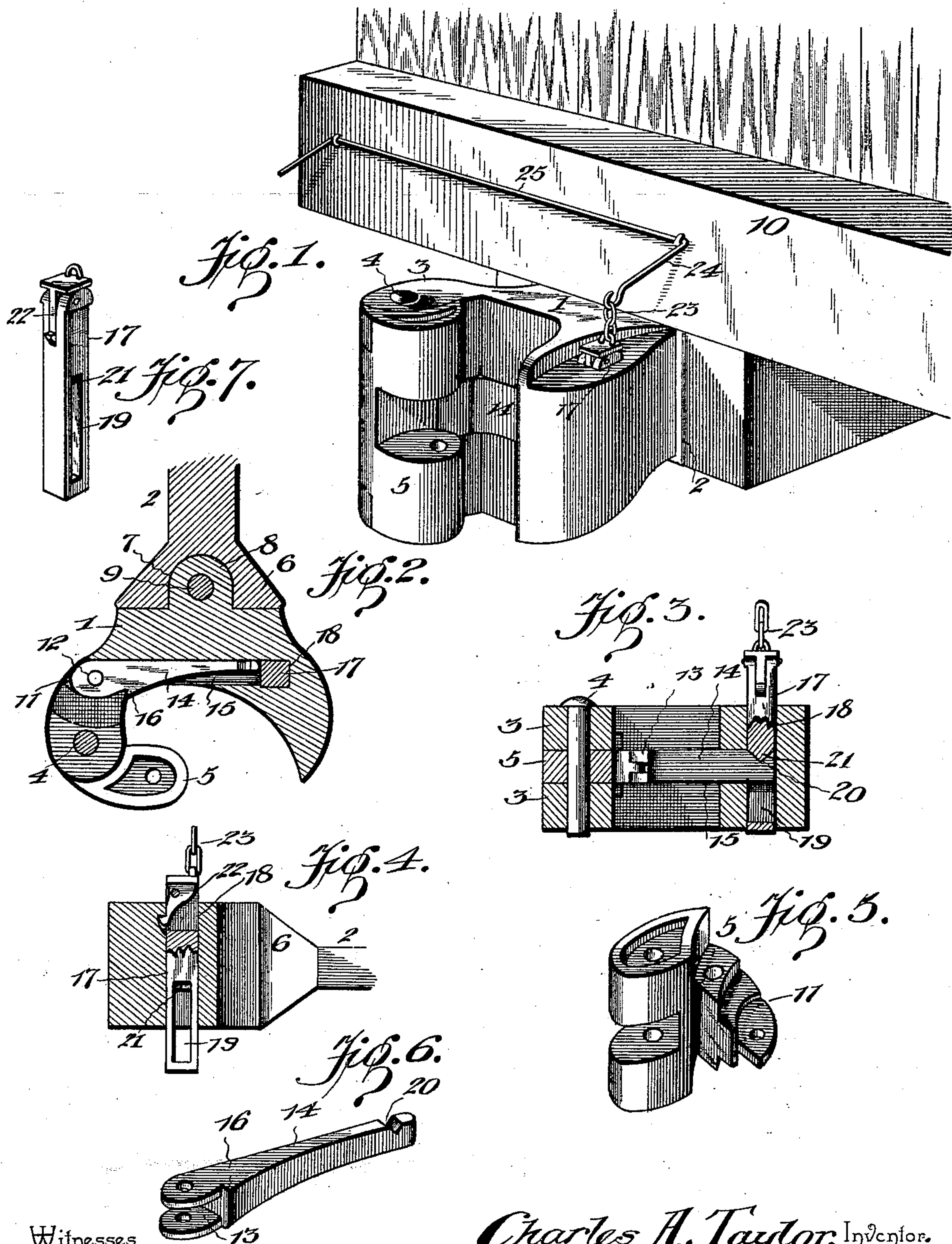
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Patented Apr. 11, 1899.

C. A. TAYLOR.  
CAR COUPLING.

(Application filed Mar. 14, 1898.)

(No Model.)



Witnesses

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# UNITED STATES PATENT OFFICE.

CHARLES A. TAYLOR, OF WINCHESTER, ILLINOIS.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 622,786, dated April 11, 1899.

Application filed March 14, 1898. Serial No. 673,822. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES A. TAYLOR, a citizen of the United States, residing at Winchester, in the county of Scott and State of Illinois, have invented a new and useful Car-Coupling, of which the following is a specification.

The invention relates to improvements in car-couplings.

10 The object of the present invention is to improve the construction of vertical-plane car-couplings of the Janney type and to provide a simple, strong, and inexpensive one capable of coupling automatically and adapted to be readily uncoupled without going between cars.

15 A further object of the invention is to prevent the locking-pin for holding the knuckle closed from accidentally releasing the same by being thrown upward by the vibration and jar incident to the passage of a train over a rough road-bed.

20 Another object of the invention is to provide a car-coupling in which the draw-head, should it become broken, may be replaced by a new piece without removing the draw-bar from a car.

25 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.

30 In the drawings, Figure 1 is a perspective view of a car-coupling constructed in accordance with this invention and shown applied to a car. Fig. 2 is a horizontal sectional view of the same, the knuckle being closed. Fig. 3 is a transverse sectional view, the knuckle being open. Fig. 4 is a vertical sectional view on line 4 4 of Fig. 2, illustrating the construction and arrangement of the gravity-catch for holding the locking-pin against accidental upward movement. Fig. 5 is a detail perspective view of the knuckle. Fig. 6 35 is a detail perspective view of the transverse connecting-bar. Fig. 7 is a detail perspective view of the locking-pin and its gravity-catch.

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

50 1 designates a draw-head provided with a detachable draw-bar 2, and having perforated

ears 3 at one side to receive a knuckle-pin 4, which pivots a knuckle 5 to the draw-head. The front end 6 of the draw-bar 2 is enlarged and provided with a socket 7 for the reception of a short shank 8 of the draw-head, which is detachably connected with the draw-bar by a pin or bolt 9, passing through registering perforations of the latter and the shank 8, whereby the draw-head, should it become broken or otherwise unfit for use, may be readily replaced by a new piece without detaching the draw-bar from the car 10.

60 The enlargement 6 fits against the rear or inner face of the draw-head, and the connection between the draw-head and the draw-bar possesses sufficient strength to enable it to withstand all the strain incident to the use of a car-coupling; but the draw-head may be formed integral with the draw-bar in the usual manner.

70 The knuckle, which is pivotally connected to the draw-head, is adapted to open and close and is capable of coupling with a similar car-coupling in the usual manner. The arm 11 of the knuckle, as illustrated in Fig. 5 of the drawings, is reduced to form bearings 11<sup>a</sup> and 11<sup>b</sup>, which engage corresponding shoulders of the draw-head when the knuckle is closed, and these bearings 11<sup>a</sup> and 11<sup>b</sup>, together with the top and bottom portions 5<sup>a</sup> of the knuckle, form three distinct bearings or abutting portions for supporting the knuckle when the same is closed. This construction increases the strength of the knuckle and greatly lessens its liability to breakage by the blows and strains incident to coupling and to the passage of a train over a rough road-bed. The said arm 11, which is extended beyond the perforation for the knuckle-pin, is reduced and pivoted by a pin 12 in a bifurcation 13 of a transversely-disposed connecting-bar 14, which is arranged in a transverse recess or opening 15 of the front or outer end of the draw-head. The bifurcated end of the transverse connecting-bar is provided at the inner end of the bifurcation with a shoulder 16, adapted to engage the inner side of the arm of the knuckle to limit the inward swing thereof.

100 The transverse connecting-bar 14 is reciprocated in the transverse opening or recess 15 of the draw-head when the knuckle is open and closed, and it is locked against such re-



ciprocation to hold the knuckle closed by a vertical locking-pin 17, arranged in a vertical perforation or opening 18 of the draw-head at the side opposite the perforated ears. The vertical opening or perforation 18 is located at the adjacent end of the transverse recess or opening 15, and the locking-pin is provided at its lower portion with a vertical slot 19, adapted when brought opposite the transverse bar 14 to receive the adjacent end of the same and permit the said bar to slide sufficiently to allow the knuckle to open. The upper portion of the locking-pin above the slot 19 is solid and is adapted to engage the transverse connecting-bar 14 for holding the knuckle closed.

In order to hold the knuckle open and retain it in position for automatic coupling and prevent it from closing accidentally, the outer end of the transverse connecting-bar 14 is provided with a V-shaped notch 20, having inclined edges and adapted to receive an oppositely-beveled edge 21 at the upper end of the slot 19. The weight of the locking-pin is sufficient to hold the knuckle against accidental closing; but when two cars come together for coupling the pressure lifts the locking-pin and withdraws the transverse bar from the slot, causing the said locking-pin to fall and bring its solid portion opposite the transverse bar. By this construction the operation of coupling is rendered automatic, and the necessity of opening the knuckle and setting it by hand preparatory to coupling is obviated.

The locking-pin is retained in engagement with the knuckle and is prevented from being thrown upward accidentally by a gravity-catch 22, pivoted in a bifurcation of the upper end of the locking-pin by a transverse fastening device and consisting of a shank and a weighted head. The shank is provided at its lower end with a tooth beveled at its lower face and having its upper face arranged to engage a recess in the front wall of the perforation or opening 18, and the weighted head, which is of sufficient size to extend over the bifurcated upper end of the pin and the opening 18, operates to hold the tooth in engagement with the draw-head.

The head of the gravity-catch is provided with an eye which is connected by a short chain 23 with an arm 24 of a transverse rock-shaft 25, which is journaled in suitable bearings in the car and provided at its outer end with an arm forming a handle. The rock-shaft, which may be extended entirely across the car, if desired, enables the locking-pin to be readily lifted out of engagement with the knuckle, and the upward movement of the inner arm swings the upper portion or head of the gravity-catch forward, thereby disengaging the tooth from the recess of the front wall of the opening 18 and releasing the locking-pin.

The invention has the following advantages: The car-coupling is simple, strong, and durable, is capable of automatic coupling, and is adapted to be readily uncoupled without going between cars. The knuckle when it is open for uncoupling is locked in its open position and prevented from closing accidentally, and the locking-pin, which holds the knuckle closed, is provided with an automatically-operating catch capable of holding the locking-pin against accidental upward movement and adapted to be readily disengaged from the draw-head by the operating mechanism for lifting the locking-pin in uncoupling; also, the draw-head is adapted to be readily replaced by a new piece should it become broken or otherwise unfit for use without removing the draw-bar and disconnecting the same from the draft mechanism.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

What I claim is—

1. In a car-coupling, the combination of a draw-head, a pivoted knuckle, a locking-pin, and a catch mounted on the locking-pin in an opening thereof, and extending longitudinally of said pin and pivoted at a point between its ends, the inner end of the catch being arranged to engage the interior of the draw-head, and its outer end being located on the exterior of the same and adapted to be connected with the operating mechanism, substantially as described.

2. In a car-coupling, the combination of a draw-head having a locking-pin opening and provided with a recess in the wall thereof, a pivoted knuckle, a locking-pin provided with a bifurcation, and a catch pivoted in the bifurcation of the locking-pin and having its engaging portion arranged within the draw-head and adapted to engage the recess thereof, substantially as described.

3. In a car-coupling, the combination of a draw-head, a knuckle pivoted at one side thereof, a locking-pin arranged at the other side of the draw-head and provided with an opening and having a beveled edge at the top of said opening, and a transverse bar connected with the arm of the knuckle and having a notch at its upper edge to receive the beveled edge of the locking-pin, said notch being provided with an inclined or beveled edge, whereby it is automatically withdrawn from the locking-pin when the knuckle is closed in coupling, substantially as specified.

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

CHARLES A. TAYLOR.

Witnesses:

JAMES CALLANS,  
WILEY L. KELLEY.