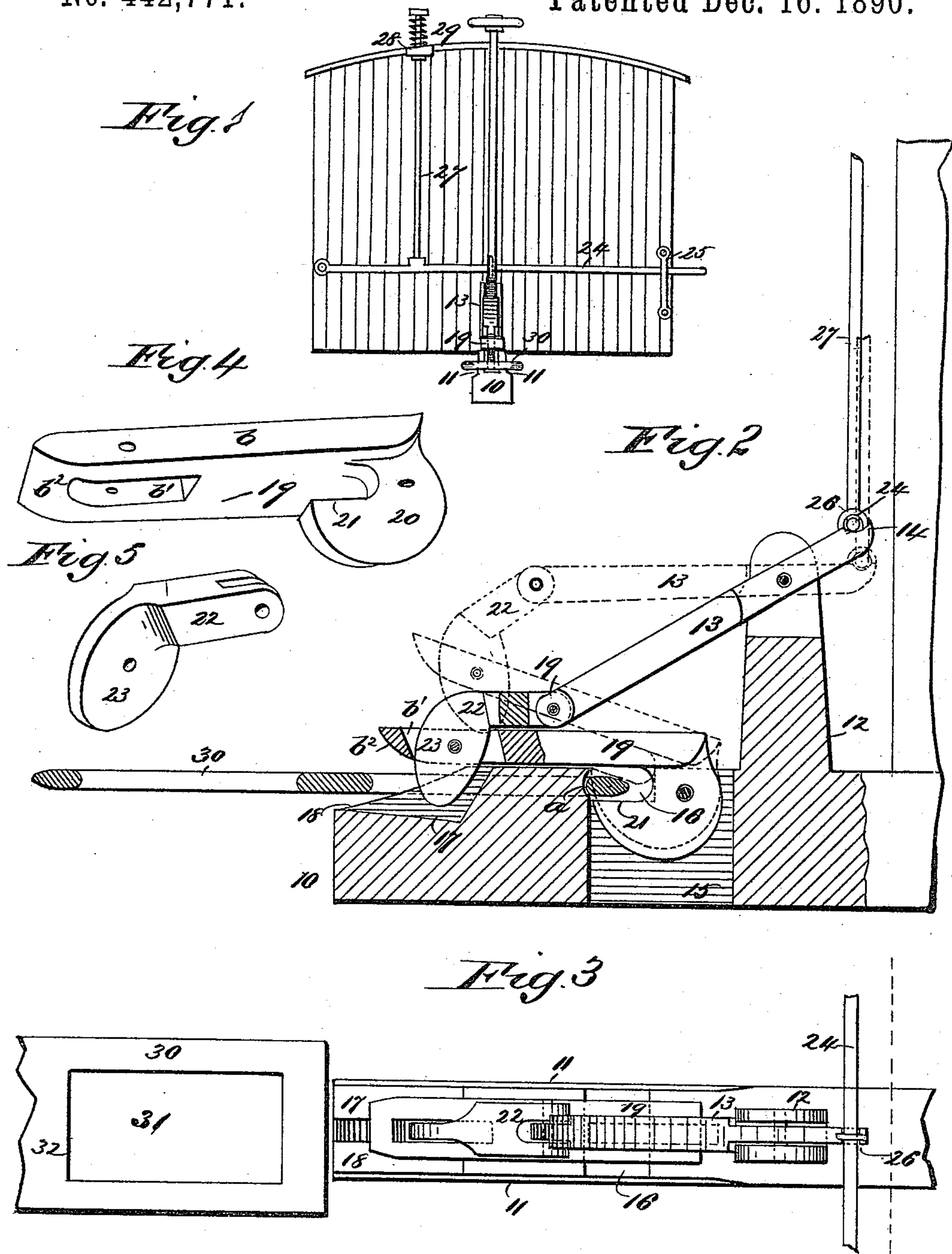


(No Model.)

W. H. FRANKS.  
CAR COUPLING.

No. 442,771.

Patented Dec. 16. 1890.



WITNESSES:

*Francis M. O'Connell*  
*E. Sedgwick*

INVENTOR:

*W. H. Franks*  
BY *Munn & Co*  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

WILLIAM H. FRANKS, OF SONORA, TEXAS.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 442,771, dated December 16, 1890.

Application filed October 6, 1890. Serial No. 367,197. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. FRANKS, of Sonora, in the county of Sutton and State of Texas, have invented a new and useful Improvement in Car-Couplings, of which the following is a full, clear, and exact description.

My invention relates to an improvement in car-couplings, and has for its object to provide a coupler of simple and durable construction and capable of being manipulated from the top or side of freight-cars and from the side or platform of passenger-cars; and the invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is an end view of a car having the coupler applied. Fig. 2 is a central longitudinal section through the coupler. Fig. 3 is a plan view thereof, and Figs. 4 and 5 are detail views of the lock-link and elevating-link.

The draw-head 10, which may be attached to any suitable form of draw-bar, is practically rectangular in cross-section, and the upper portion of the draw-head at each side is provided with a longitudinal recess 11, whereby the upper portion of the head is of less width than its lower portion. At or near the rear end of the draw-head a post 12 is erected, and in the upper end of said post a lever 13 is fulcrumed, the said lever being fulcrumed between its center and rear extremity. The lever extends much farther beyond the front face of the post 12 than the rear face thereof, and in the upper surface of the rear end of the lever a concavity or a recess 14 is produced.

In front of the post 12 a longitudinal opening 15 is formed in the draw-head, which preferably extends from its top to its bottom, and in the upper surface of the said draw-head an essentially rectangular transverse recess 16 is made, the forward wall of which recess is preferably concaved, as illustrated at *a* in Fig. 2. The recess 16 crosses a portion of the opening 15. A longitudinal recess 17 is also

provided in the upper forward face of the draw-head, the base-wall of which recess is inclined downward and rearward and the rear end wall downward and forward, as illustrated in Fig. 2, and the upper face of the draw-head at its forward end is downwardly and forwardly beveled, as illustrated at 18 in Fig. 2.

A link 19, which for convenience I denominate the "locking-link," is pivotally connected with the draw-head. The locking-link 19 is illustrated in detail in Fig. 4, and consists of a horizontal member *b*, provided at its forward or outer end with a longitudinal slot *b'*, and an upwardly-curved or cylindrical lower face *b<sup>2</sup>* at the said end.

A hook-like extension 20 is formed integral with or is attached to the under face of the link at its inner or rear end, the extension 20 being curved downward and upward in the direction of the center of the link, and the upper face 21 of the said extension is flat and parallel with the under face of the body of the link. The hook-extension 20 is pivoted in the opening 15 of the draw-head in such a manner that when the body of the link rests upon the upper surface of the draw-head, the face 21 of the hook-like extension will be flush, or practically so, with the base or floor wall of the transverse recess 16.

A second link 22 is pivotally connected with the outer end of the locking-link 19. The link 22 I preferably denominate a "lift-link," as the said link at its outer or forward end is provided with a downwardly-extending essentially oval nose 23, the said nose being adapted to extend downward through the opening *b'* of the lock-link and enter the recess 17 of the draw-head, the pivotal connection of the lift-link with the lock-link being effected by passing a pin through the nose of the former, as is best illustrated in Fig. 2. The rear end of the lift-link 19 is pivotally connected with the forward end of the lever 13.

The lever 13 is compressed at its rear end by a trip-bar 24, pivoted at one end near one side of the car, the said bar being adapted to extend transversely of the end of the car and project beyond the opposite side, as best shown in Fig. 1, the projecting end passing through a suitable guard 25. The trip-bar 24



rests upon the concaved surface 14 of the lever, and at its point of contact is held in constant engagement with the lever by a staple 26 or its equivalent.

5 In order that the lever 13 may be operated from the top of the car when occasion may demand, an upright bar 27 is connected with the trip-bar at one side of its center, the upper end of the bar 27 being made to pass  
10 through a suitable guide-block 28, located at the top of the car, and its upper end is fitted with a suitable knob.

A spring 29 is coiled around the rod 27 between the guide-block and the knob, and thus  
15 when the bar 27 is pressed downward the trip-bar is also carried in the same direction, which action forces the outer end of the lever 13 upward. The coupling-link 30 is preferably rectangular in general contour, being  
20 provided with an opening 31 at each side of a central bridge 32.

In the operation of coupling, the link of an opposed draw-head rides up the inclined surface 18 of the draw-head and strikes the nose  
25 23 of the link 22, and by pressing the said nose inward the lock-link 19 is elevated at its forward end, the cylindrical surface  $b^2$  of the link serving as a guide to conduct the coupling-link to an engagement with the said nose  
30 23. When the lock-link has been lifted by the coupling-link, the coupling-link passes rearward until it enters the recess 16 of the draw-head, and when the link has so entered the recess the bridge 32 will rest essentially  
35 upon the inclined front face of the draw-head. When tension is exerted upon the link, it is carried upward from the draw-head, held in a true horizontal position, and the inner end of the coupling-link engages with  
40 the concave wall  $a$  of the said recess 16. In the process of uncoupling, the moment the rear end of the lever 13 is depressed its forward end is elevated, which action also elevates, through the medium of the lift-link  
45 22, the forward end of the lock-link 19, and by thus elevating the forward end of the lock-link the hook-extension 20 is also carried upward, which raises the inner end of the coupling-link a sufficient distance to enable it to  
50 be drawn outward over the top of the draw-head.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

55 1. In a car-coupler, the combination, with a draw-head provided with an upwardly-extending post, and a lever fulcrumed in said post, of a lock-link consisting of a horizontal body portion and a hook-extension at its rear  
60 end, and a lift-link provided with a nose at one extremity, the opposite extremity being pivoted to the lever and the nose pivotally connected with the forward end of the lock-link, as and for the purpose specified.

65 2. In a car-coupler, the combination, with a draw-head provided with a vertical opening and an intersecting upper transverse recess,

of a lever fulcrumed upon the draw-head, a lock-link pivoted in the opening of the draw-head, provided at its pivotal point with a downwardly-extending hook-extension and an opening at its forward end, and a lift-link having a nose formed at one extremity, which nose is pivoted in the opening of the forward extremity of the lock-link, the rear end of the lift-link being pivotally connected with the lever, as and for the purpose specified. 70 75

3. In a car-coupler, the combination, with a draw-head provided with a vertical opening and an intersecting upper transverse recess, 80 of a lever fulcrumed upon the draw-head, a lock-link pivoted in the opening of the draw-head, provided at its pivotal point with a downwardly-extending hook-extension and an opening at its forward end, and a lift-link 85 having a nose formed at one extremity, which nose is pivoted in the opening of the forward extremity of the lock-link, the rear end of the lift-link being pivotally connected with the lever, a trip-bar fulcrumed at one end and adapted for engagement with the lever, and means, substantially as described, for operating the said trip bar, as and for the purpose specified. 90

4. In a car-coupler, the combination, with a draw-head provided with an upper inclined face at its forward end, an angular recess in said face, a vertical opening near its center, a transverse recess crossing the said opening, and a post projected upward at the rear of the opening, of a link having a hook-extension at one end, which hook-extension is pivoted in the opening of the draw-head, a lever fulcrumed between its center and rear extremity in the post of the draw-head, and an upper link pivotally connected with the lever and provided with an extension at its forward end passing through the lower link, which extension is connected with the lower link, as and for the purpose specified. 95 100 105 110

5. In a car-coupler, the combination, with a draw-head provided with an upper inclined surface at its forward end, a central vertical opening, and a transverse recess crossing the said opening, of a locking-link provided with a longitudinal opening at its forward end and a downwardly-projected hook-extension at its rear end, which hook-extension is pivoted in the opening of the draw-head, a lever fulcrumed between its center and rear end upon the draw-head, an upper or lift link provided with an extension at its forward end passing through the opening of the locking-link and pivoted therein, the rear end of the lift-link being pivotally connected with the lever, and a coupling-link provided with an opening at each side of a central bridge, as and for the purpose specified. 115 120 125

Witness my hand this 17th day of September, A. D. 1890.

WILLIAM H. FRANKS.

Witnesses:

G. W. MORRIS,  
W. H. CUSENBARY.