

(No Model.)

T. FALES.
CAR COUPLING.

No. 572,416.

Patented Dec. 1, 1896.

Fig. 1.

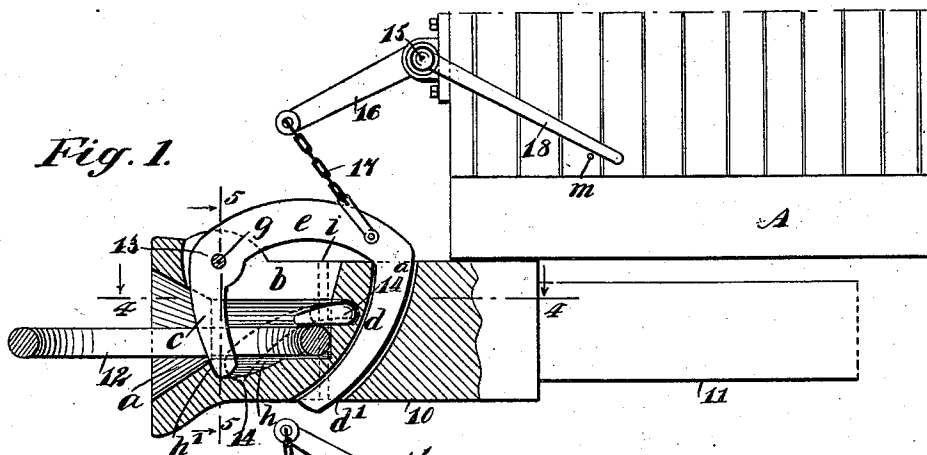


Fig. 2.

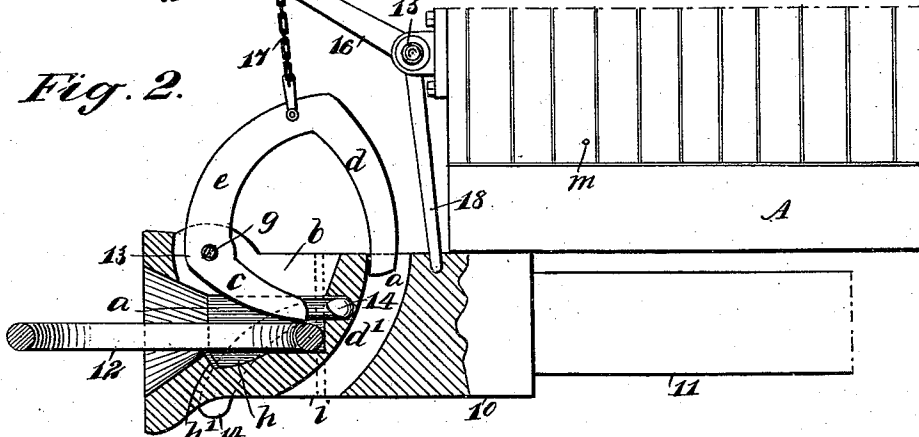


Fig. 3.

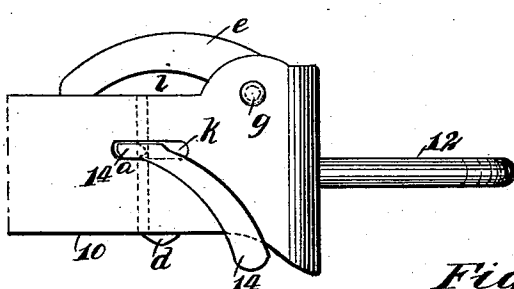


Fig. 4.

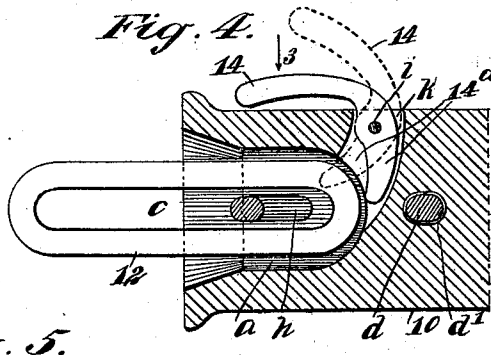
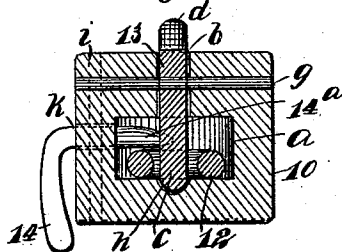


Fig. 5.



WITNESSES:

Wm. P. Patton
J. H. Kanaford

INVENTOR
T. Fales

BY

Wm. P. Patton
ATTORNEYS.

UNITED STATES PATENT OFFICE.

THOMAS FALES, OF BRIDGEPORT, CALIFORNIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 572,416, dated December 1, 1896.

Application filed April 28, 1896. Serial No. 589,395. (No model.)

To all whom it may concern:

Be it known that I, THOMAS FALES, of Bridgeport, in the county of Mono and State of California, have invented certain new and useful Improvements in Car-Couplings, of which the following is a full, clear, and exact description.

This invention relates to improvements in car-couplings of the pin-and-link type, and has for its object to provide novel, simple, and practical features of construction for a car-coupling of the indicated character which will adapt such a coupling for an automatic coupled connection with a similar coupling and enable the safe detachment of the engaged couplings from the side of either of the cars connected by said couplings.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and indicated in the claims.

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

Figure 1 is a partly-sectional side view of the improved car-coupling on an end portion of a car, the coupling being adjusted to hold a link projected for a coupled engagement with a like coupling. Fig. 2 is a partly-sectional side view of the improved car-coupling on a car in part and having details of construction adjusted to release the coupling-link. Fig. 3 is a side view of the forward portion of the coupling and of a coupling-link held thereby seen in direction of arrow 3 in Fig. 4. Fig. 4 is a sectional plan view of the improved coupling, substantially on the line 4 4 in Fig. 1; and Fig. 5 is a transverse sectional view substantially on the line 5 5 in Fig. 1.

The draw-head 10 of the improved car-coupling is preferably cast into form from any suitable metal and has an integral draw-bar extension 11, which may be secured on the car-body A by any approved means. The draw-head 10 is recessed from the front end rearwardly of a correct depth and other dimensions to freely permit the introduction therein of the elongated coupling-link 12, the latter being of ordinary form. (Best shown in Fig. 4.)

The front end of the recess *a* in the draw-

head 10 is widened by flaring the walls of the latter, so that the link 12 may be freely inserted and laterally moved as occasion may require, and said link is so proportioned in length that it will project from the draw-head a sufficient degree to couple with a similar draw-head when the inserted end of the link has contact with the rear wall of the recess or chamber *a*.

A slot *b* is formed in the upper wall of the draw-head and extends rearwardly from near the front edge of said wall to a point near the rear wall of the chamber *a*, said slot being provided for reception of the coupling-dog 13, that is pivoted therein. The dog 13 is of unique form and, as plainly shown in Figs. 1 and 2, comprises a coupling-limb *c*, a guide-limb *d*, and a spacing-bar *e*. The coupling-limb *c* is curved edgewise, having its convex edge at the front, and the guide-limb *d* is also curved edgewise, but has the concave edge of the same at the front. The limbs *c* and *d* are integrally joined by the spacing-bar *e*, that is arched a suitable degree.

The dog 13, as before mentioned, is pivoted in the slot *b*, its point of rocking support being near the front end of said slot, and consists of the transversely-inserted bolt *g*, that loosely engages a perforation of the dog at the junction of the limb *c* with the forward end of the spacing-bar *e*.

The degree of curvature afforded the guide-limb *d* is defined as an arc of a circle having the pivot-bolt *g* as a center, and said limb is adapted to reciprocate in a curved aperture *d'*, formed to receive it in the body of the draw-head 10 rearward of the chamber *a*.

It will be seen that the coupling-limb *c* is so proportioned in length from the pivot-bolt *g* to the free end of said limb that the latter will be adapted to traverse a longitudinally-formed channel *h* in the lower wall of the draw-head when the coupling-limb is rocked rearwardly and upwardly, the forward rocking movement of said limb being arrested when it is nearly upright by the impinge of its free lower end on a shoulder *h'*, that is the forward terminal of the channel *h*.

A simple means for supporting the link 12, projected from the draw-head 10, so as to enter a similar draw-head and couple therewith, consists of the bent arm 14, which is

pivoted, as at *i*, in a slot *k*, formed in a side wall of the draw-head.

The arm 14 has a detent-finger 14^a, that is integral therewith and lies within the draw-head 10, occupying a portion of the slot *k*, which cuts through the rear end wall of the chamber *a*, and is thus adapted for forward adjustment to rest on an inserted link 12 when the arm proper is moved rearwardly, as shown by dotted lines in Fig. 4. The bent arm 14 projects forward and downward when its finger 14^a lies in the open recess produced at the inner termination of the slot *k* and is preferably afforded increased weight at its free outer end, so that it will readily assume a forwardly-projecting position, as indicated by full lines in Fig. 4, requiring manipulation to rock it rearwardly and place the finger 14^a over the rear end of link 12.

The preferred means for operating the coupling-dog 13 consists of a rock-shaft 15, loosely supported across the end of the car-body *A* at a suitable distance from the draw-head 10, said shaft having an arm 16, that is projected over the spacing-bar *e* of the coupling-dog, and thereto flexibly connected with the chain 17 or by other equivalent means.

Two tripping-arms 18 of like form, one being shown in Figs. 1 and 2, are respectively affixed to the opposite ends of the shaft 15 and project along the sides of the car near to the same, their relative positions with regard to the rock-arm 16 being such as will adapt either tripping-arm to be forwardly moved a sufficient degree to rock said arm 16 upwardly and move the coupling-dog 13 into the position shown in Fig. 2. The arms 18 may be supported in rearward adjustment by a short pin *m*.

The operation is as follows: The link 12 being held by the finger 14^a so as to project in front of the draw-head 10 said link may be readily inserted within the chamber of another draw-head that is on a car and moving toward the one having the link, which latter is coupled to the draw-head by the limb *c*, as shown Fig. 1. When the link 12 impinges the convex front edge of the limb *c* on an approached car-coupling having the improvements, said limb will rock rearwardly and upwardly, so as to permit the free entrance of the link, and when the end of the latter has passed rearward of the limb *c* the weight of the guide-limb *d* and spacing-bar *e* will rock the coupling-dog into normal position, and so automatically couple two cars having the improved couplings. It will be observed that the engagement of the lower end of the coupling-limb *c* on the dog 13 with the shoulder *h'* of the channel *h* will throw the pull of the link on said shoulder and relieve the pivot-bolt *g* from a considerable part of the draft strain imposed on the car-coupling by the link 12.

It is claimed for this improved car-coupling that it is very simple, perfectly practical in operation, is automatic in effecting the con-

nection of two couplings, and that cars having the improvements may be detached with safety and ease at the side of said cars. It is feasible to convert the common link-and-pin car-coupling into one having the features of improvement by application of the latter to the common draw-head, so that an adoption of the improved car-coupling may be gradually made.

Old car-couplings of the ordinary link-and-pin type may be used along with such as have the improvements, thus avoiding any difficulty in maintenance of service while alterations in the style of the car-couplings are being made.

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

1. A car-coupler having a draw-head provided with a rearwardly-located arc-shaped aperture, a longitudinally-extending slot forward of the aperture and a throat communicating with the slot and out of communication with the arc-shaped aperture, and a dog having limbs connected by a spacing-bar, one of the limbs being curved in conformity with the curvature of the aperture and being capable of moving in and out thereof and the second limb being movable in the slot and capable of projecting into the throat to engage the link, the limbs being connected by the spacing-bar and the dog being pivoted to the draw-head at the juncture of the spacing-bar and the said second limb, substantially as described.

2. A car-coupler having a draw-head provided with a rearwardly-located arc-shaped aperture, a longitudinal slot forward of the aperture, the longitudinal slot communicating with the throat of the draw-head which is located below it, and a dog having two limbs and a connecting-bar, one limb of the dog being curved in conformity to the curvature of the aperture and capable of moving in and out of said aperture and the second limb of the dog being capable of moving from the slot into the throat and of engaging and holding the link, the two limbs being connected by the spacing-bar and the dog being pivoted to the draw-head at the juncture of the spacing-bar and the said second limb, substantially as described.

3. A car-coupler having a draw-head provided with a throat and a longitudinal slot above the throat, means moving in the slot by which the link may be held in the draw-head, and an arm movable in a horizontal recess in the draw-head and on a vertical axis, one end of the arm being capable of projecting into the throat to engage the top of the link, the other end of the arm being extended outward, substantially as described.

THOMAS FALES.

Witnesses:

SAMUEL FALES,
W. H. VIRDEN.