(No Model.)

J. McG. MASON.

CAR COUPLING.

No. 418,954. Patented Jan. 7, 1890.

Fig 1

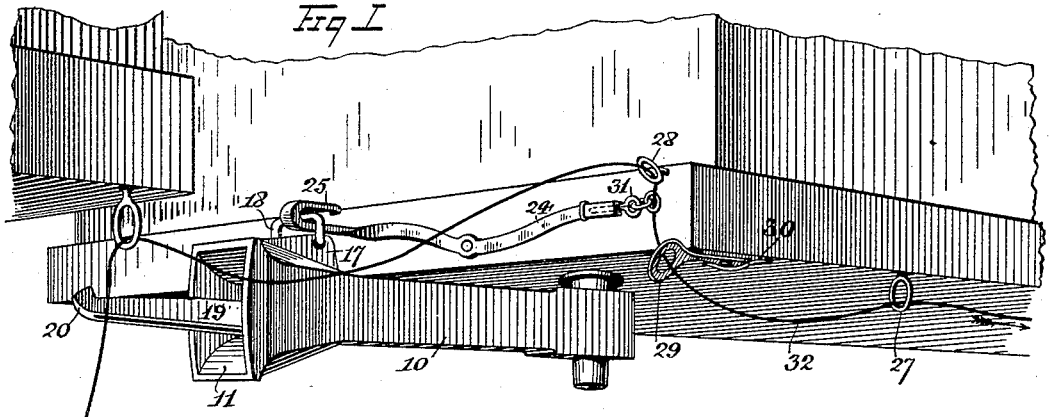
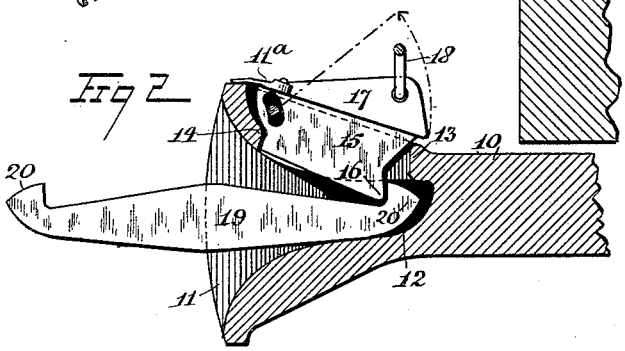


Fig 2



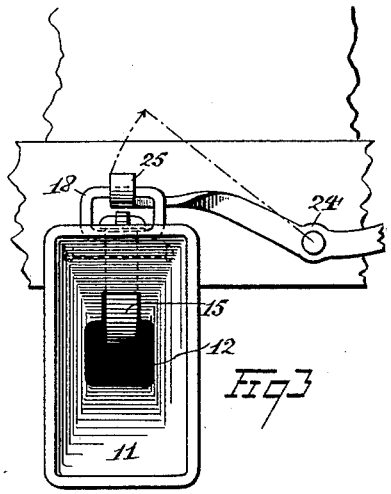


Fig 3

Fig 4

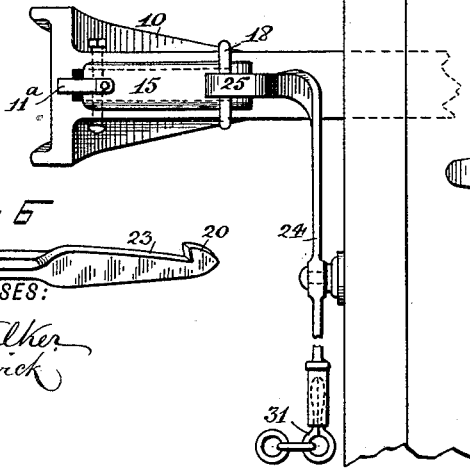
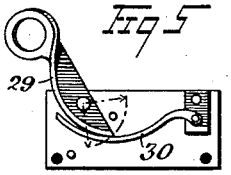


Fig 5



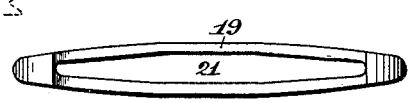


Fig 6

Fig 7

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JAMES McG. MASON, OF NEW GLASGOW, NOVA SCOTIA, CANADA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 418,954, dated January 7, 1890.

Application filed August 24, 1889. Serial No. 321,807. (No model.) Patented in Canada April 9, 1889.

To all whom it may concern:

Be it known that I, JAMES McG. MASON, of New Glasgow, in the Province of Nova Scotia and Dominion of Canada, have invented a new and Improved Car-Coupler, of which the following is a full, clear, and exact description.

My invention relates to an improvement in car-couplers, and has for its object to provide a means whereby the cars of a train may be uncoupled in a convenient and expeditious manner from the engine or by a brakeman at a point distant from the car to be uncoupled; and a further object of the invention is to so construct the draw-head and pin that they will be very simple and durable and protected from the weather.

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 of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of a draw-head attached to a car. Fig. 2 is a central vertical section through the draw-head. Fig. 3 is a front elevation of the same. Fig. 4 is a plan view. Fig. 5 is a bottom plan view of the tension device, and Figs. 6 and 7 are respectively a perspective and a plan view of different forms of links employed in connection with the draw-head.

The draw-head 10 is provided with a link-opening 11, the side and bottom walls of which are inwardly beveled, which link-opening leads to a horizontal chamber 12 in the draw-head, which chamber is intersected by a rectangular pin opening 13, formed in the top of the draw-head. The draw-head is preferably so constructed that the top and bottom outer faces will incline from the front in the direction of the rear.

Any approved form of draw-bar may be employed in connection with the draw-head, and the said draw-bar may be attached to the car in any suitable manner.

The forward wall of the pin-opening 13 is concaved from the top downward the greater portion of its length, the remaining portion being perpendicular, whereby a shoulder 14 is obtained.

The coupling-pin 15 is pivoted at its forward end in the pin-slot 13, and the forward end of the coupling-pin is made to conform to the contour of the forward end of its slot. The rear end of the said coupling-pin is angular, whereby a lip 16 is formed, which, by reason of the inclined position of the outer upper face of the draw-head, extends downward in the chamber 12, as shown in Fig. 2. The downward movement of the pin in its slot is limited by providing the same with a flanged head 17, contacting with the face of the draw-head surrounding the pin-slot. In this head 17, at the rear end, a link 18 is introduced.

Upon the upper forward end of the coupling-pin I preferably attach a strip of spring metal 11^a, which extends over the forward end of the pin-slot, thereby preventing snow or rain from entering the slot, the said spring-plate also serving to throw the pin downward in its slot when elevated and released.

The link 19, preferably employed in connection with the draw-head, as illustrated in Figs. 2 and 7, consists of a casting or forging of greatest width at its center and tapered in direction of its ends, as shown in Figs. 2 and 7, which ends are formed to the shape of a half arrow-head, as best illustrated at 20 in Fig. 2, both of the heads being made to extend upward, and the lower surface of the heads is cylindrical to better facilitate the entrance of the link into the link-opening of the draw-head.

In order that the link 19 may be successfully used with an ordinary pin-coupler, the body of the link is provided with a slot 21, extending through from top to bottom and from head to head, as best shown in Fig. 7.

In Fig. 6 I have combined the ordinary link 22 with a solid casting or forging 23, having formed at its extremity a half arrow-head 20, such as above described. When the link is introduced into the link-opening for coupling, the arrow-head contacts with the lower edge of the pin, lifting the same out of the way, and as soon as the head of the link in the

draw-head reaches the rear portion of the chamber 12 the pin drops by gravity, and its lip 16 contacts with the outer face of the head, as shown in Fig. 2, whereby the said link is effectually prevented from being drawn outward until the pin is purposely elevated.

By providing the draw-head with the shoulder 14 the major portion of the strain of the pull is sustained by the said shoulder, and the shock to the passengers as the train suddenly advances is materially lessened.

The pin 15 is elevated through the medium of an angled lever 24, fulcrumed upon the sill of the car, as shown in Figs. 1 and 3, one member of which lever extends forwardly over the draw-head through the link 18 of the pin, the extremity being bent over to a hook shape, as shown at 25 in Fig. 1, to insure a positive connection with the pin. To this hook a chain, rope, or other device may be attached, leading up to the roof of the car, whereby the uncoupling may be effected from that point.

In uncoupling from the side of the car the operator need simply press the member of the lever extending parallel with the sill of the car downward, whereby the coupling-pin 15 is easily and expeditiously elevated. To uncouple from the engine, or to uncouple the last car of the train from any of the intermediate cars, I provide the following device, which consists in screwing or otherwise attaching to the bottom of the cars near one side a series of eyes 27, as shown in Fig. 1, and similar eyes 28 are attached to the top of each sill of the car near the side, while a tension device 29 is pivoted beneath the sill, the outer end of which is twisted and extends beyond the sill facing the end of the lever. The device is held normally in this position by means of a spring 30, as illustrated in Fig. 5.

In the handle end of each of the angled levers 24 a recess is made, and into the said recess a spring-key 31 is introduced, having one or more rings attached, as illustrated in Figs. 1 and 4. A cord 32, leading to the engine, is passed through the several eyes 27, through the tension devices 30, and the eyes 28, and likewise through the outer ring of each spring-key 31.

When it is necessary for the engineer, for instance, to uncouple the rear car, or for a brakeman at the forward end of the train, it is accomplished by drawing upon the cord 32, whereupon the handle end of the lever is depressed, the coupling-pin elevated, and the link rendered free to be withdrawn. When the handle end of the lever has assumed a downward inclination, the tension upon the cord withdraws the key 31 therefrom, and the said key, which is at the end of the cord, is drawn through the rings of the last car of the train until it reaches, for instance, the eye attached to the said car at its forward end. To uncouple this car, the cord and key being in the position shown in Fig. 1 and one car having been already uncoupled from the train, as aforesaid, the cord or rope is again drawn forward, and the keys are readily drawn from the eyes to be uncoupled through the eyes 28 of the next car to which it is coupled, and from thence to a contact with the rings of the key in the lever 24, through which the keys at the end of the rope or cord cannot pass. Thus, if the tension upon the rope is continued, the key or keys upon the rope contacting with the key in the lever draws the handle end of the lever downward, elevates the coupling-pin, and releases the link, and when the lever-handle has assumed a sufficient downward inclination the pin is withdrawn therefrom.

In practice the uncoupling-cord may have pieces of leather secured to it with figures produced thereon, enabling the engineer to ascertain when he has drawn the end key through the eyes of the car he desires to uncouple, and any form of windlass may be located in the engine-cab to facilitate the manipulation of the cord.

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

1. In a car-coupling, a draw-head provided with a link-opening having a curved rear end and with a pin-slot having a partially concave and perpendicular forward wall, in combination with a coupling-pin having its forward end made to conform to the contour of the forward end of the said slot and provided with a slot at said end and with lip at its rear end extending down into the link-opening, substantially as herein shown and described.

2. In a car-coupling, the combination, with a draw-head provided with the link-opening 12, having curved rear end, and with the pin-slot 13, having a partially concave and perpendicular forward end, of the coupling-pin 15, having its forward end made to conform to the contour of the forward end of the slot and provided with a curved slot at said forward end and with the lip 16 at its rear end, and the pivoted angle-lever 24, having one member connected to said pin, substantially as herein shown and described.

3. In a car-coupler, the combination, with a draw-head provided with a pivoted coupling-pin, of a pivoted angle-lever having one end connected to the coupling-pin, a ring detachably secured to the end of the lever, and a rope passing through the ring of the lever, substantially as and for the purpose specified.

4. In a car-coupler, the combination, with a draw-head provided with a pivoted coupling-pin and an angled lever adapted to be fulcrumed upon the sill of the car, having one member connected with the coupling-pin and the other provided with a recess in its extremity, of a tension device, substantially as described, adapted for attachment be-

neath the car, a spring-key adapted to enter the recess in the end of the said lever, links attached to the said key, and a rope adapted to pass through the tension device beneath the cars of a train and through the links of the spring-keys of the uncoupling-levers of a train, which rope is provided at its rear end with an attached spring-key, all adapted to operate substantially as shown and described.

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