(No Model.) 2 Sheets—Sheet 1.

M. D. KALBACH.

CAR COUPLING.

No. 422,796. Patented Mar. 4, 1890.

Fig. 1.

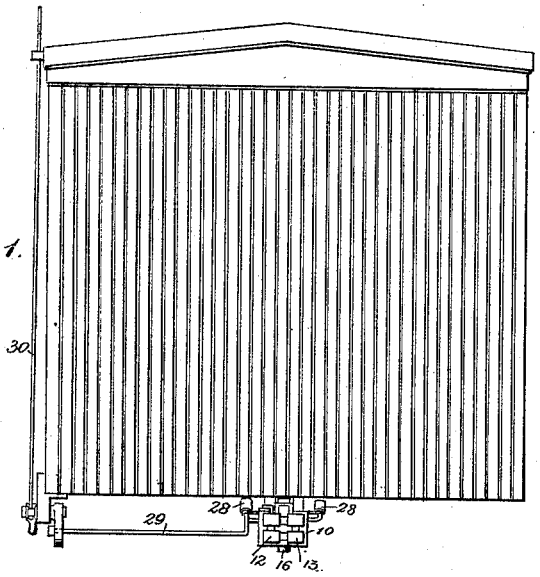


Fig. 2.

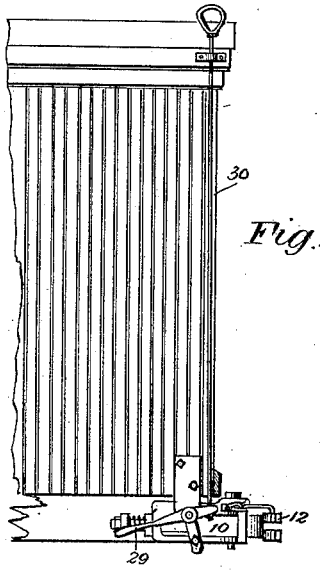


Fig. 3.

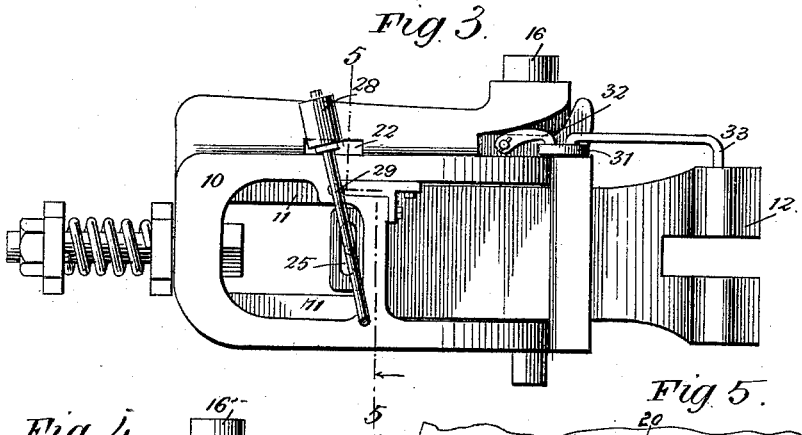


Fig. 4.

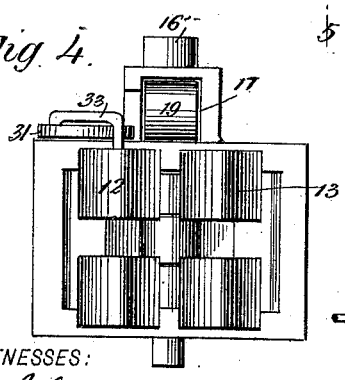
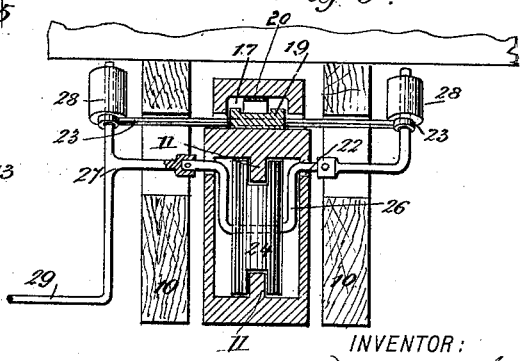


Fig. 5.



WITNESSES:

Paul Jahad

C. Sedgwick

INVENTOR:

M. D. Kalbach

BY

Munn & Co

ATTORNEYS

(No Model.) 2 Sheets—Sheet 2.

M. D. KALBACH.

CAR COUPLING.

No. 422,796. Patented Mar. 4, 1890.

Fig. 6.

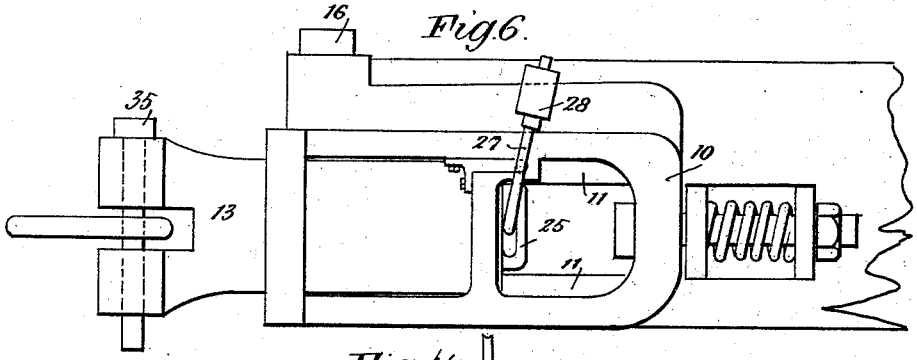


Fig. 4.

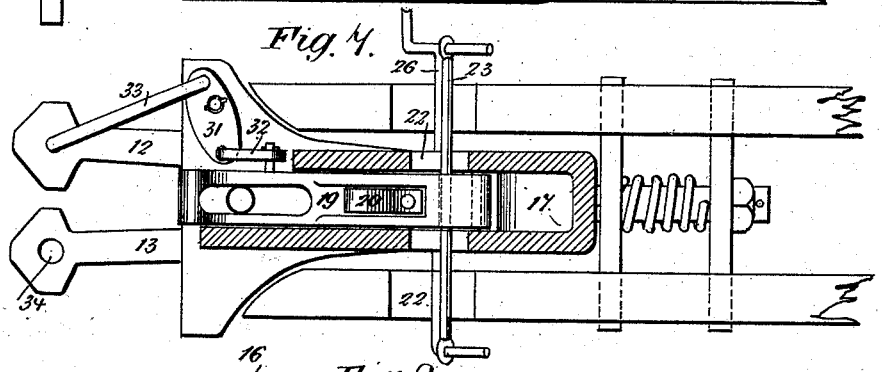


Fig. 8.

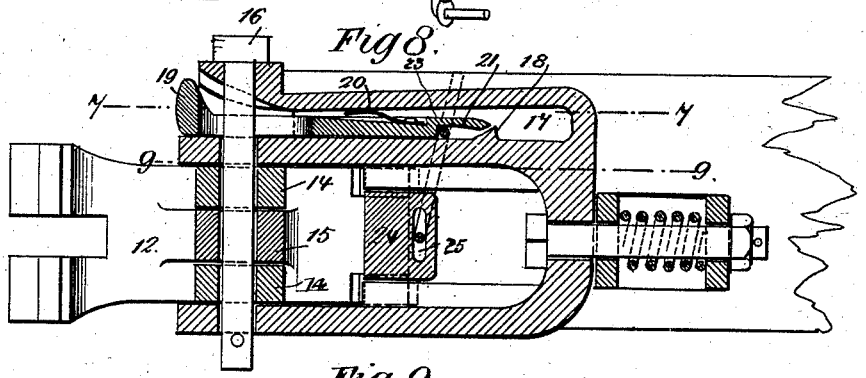
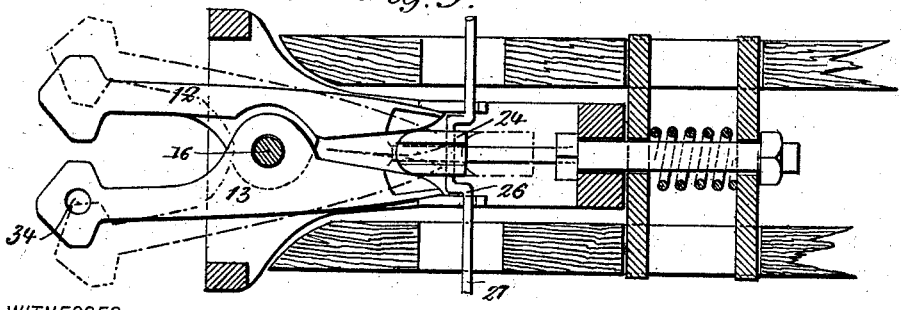


Fig. 9.



WITNESSES:

Paul Johst

C. Sedgwick

INVENTOR:

M. D. Kalbach

BY Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

MORGAN D. KALBACH, OF LEBANON, PENNSYLVANIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 422,796, dated March 4, 1890.

Application filed January 8, 1890. Serial No. 336,228. (No model.)

To all whom it may concern:

Be it known that I, MORGAN D. KALBACH, of Lebanon, in the county of Lebanon and State of Pennsylvania, have invented a new and useful Improvement in Car-Couplers, 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 coupler simple and durable in construction and capable of effecting a positive and firm connection with an opposed coupler; and a further object of the invention is to so construct the coupler that it may be used to couple with a link-and-pin draw-head and uncouple from the top or from the sides of the car, thereby obviating the necessity of the operator standing between the approaching draw-heads.

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 an end view of a car having the coupler applied. Fig. 2 is a partial side elevation of the car. Fig. 3 is an elevation of that side of the draw-head containing the mechanism by which the knuckles are manipulated. Fig. 4 is a front elevation of the draw-head. Fig. 5 is a transverse section on line 5 5 of Fig. 3. Fig. 6 is an elevation of the side of the draw-head opposite to that illustrated in Fig. 3. Fig. 7 is a horizontal section taken on line 7 7 of Fig. 8. Fig. 8 is a central longitudinal vertical section through the draw-head, and Fig. 9 is a horizontal section on line 9 9 of Fig 8.

The draw-head 10 may be of any suitable or approved construction, and ordinarily the said draw-head is provided with an opening extending through from side to side and intersecting with the usual opening at the mouth, and upon the top and bottom walls of said opening at the rear portion of the draw-head a rib 11 is formed.

Within the opening of the draw-head two knuckles 12 and 13 are pivoted, the outer ends of which knuckles extend beyond the front of the draw-head and the inner ends to a point at or near the center of the side opening. One knuckle is formed with two leaves 14 and the opposed knuckle with a single leaf 15, adapted to pass between the leaves 14, as best shown in Fig. 8. The pivoting of the knuckles within the draw-head is effected by passing a pin 16 vertically through the draw-head and through apertures formed in said leaves 14 and 15. In the construction of the draw-head a horizontal chamber 17 is formed at the top, the base-wall of which chamber near its rear end being provided with an offset 18, as best shown in Fig. 8.

Within the chamber 17 a latch 19 is held to slide, consisting of a flat casting or forging having a stout upturned outer end and a longitudinal slot near the said upturned end, through which the pivot-pin 16 of the knuckles passes. By forming the slot in the latch it is obvious that the said latch is capable of lateral movement within the chamber 17 when the pivot-pin is in position. The latch is held in whatever position it is placed in the chamber by means of a spring 20, secured to the upper face of the latch and bearing against the opposed wall of the chamber 17, and the rearward movement of the latch is limited by its inner extremity contacting with the offset 18. In the under surface of the latch, at its inner end, a recess 21 is formed, and through said recess, and likewise through side openings 22 in the draw-head, a rod 23 is passed, the said rod being adapted for engagement with the forward wall of the latch-recess 21.

Within the draw-head, at the rear of the knuckles, a locking-block 24 is held to slide, the said block being provided with a channel in its upper and lower surface, as shown in Fig. 5, to receive the ribs 11 of the draw-head; and the said locking-block is further provided at its rear end with a slot 25, as best illustrated in Fig. 3, through which slot the crank-arm 26 of a rock-shaft 27 is passed. The rock-shaft 27 extends out through the openings 22 in the draw-head, and the extremities of said shaft are upturned and made to pass through eyes formed upon the bar 23; and the upper extremities of the end projections of the rock-shaft are weighted, as illustrated at 28 in the drawings. From

one end of the rock-shaft 27 a crank-arm 29 is downwardly projected, which crank-arm is located at one side of the draw-head and is adapted for manipulation in uncoupling when the operator is upon the ground or upon the sill of the car. This crank-arm 29 is also connected by a rod 30 with the top of the car, whereby the cars may be uncoupled from the roof.

Upon the top of the draw-head, at one side, a lever 31 is centrally pivoted, which lever is connected at one end by a link 32 with the forward side of the latch 19, and at the other end by a link 33 with the knuckle 12. The knuckle 13 is provided with an opening 34, extending through from top to bottom for the reception of a coupling-pin 35, as best shown in Fig. 6, and in order that a link may be employed in connection with the coupling-pin the said knuckle is provided with a central recess at its forward or outer end, and ordinarily the opposed knuckle 12 is likewise recessed.

In operation to set the draw-head to couple with an opposed coupler the crank-arm 29 is pressed downward, whereupon the latch 19, through the medium of the cross-bar 23, is thrown outward to extend beyond the front face of the draw-head, whereby the lever 31 is manipulated to force the outer ends of the knuckles apart. This movement of the knuckles is permitted by reason of the fact that as the latch moves forward the lock-block 24 is carried rearward, leaving the inner ends of the knuckles unobstructed. When the outer end of the latch 19 is brought in contact with a knuckle of an opposed draw-head, the latch is forced inward to its normal position, (illustrated in Fig. 8,) whereupon the two knuckles 12 and 13 are made to approach one another, and the locking-block 24 is forced inward between the inner ends of the knuckles, thereby preventing their forward ends moving outward to the uncoupled or unlocked position.

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

1. In a car-coupler, the combination, with a draw-head and knuckles having a hinged connection pivoted in said draw-head, of a lock-latch held to slide in a pocket formed in the draw-head, a locking-block held to slide within the draw-head and enter a space between the inner ends of the knuckles, a rock-shaft connected with the lock-latch and locking-block, and a link-connection between the said lock-latch and one of the knuckles, substantially as and for the purpose specified.

2. The combination, with a draw-head, knuckles having a hinged connection pivoted in said draw-head, and a locking-block capable of sliding in the draw-head and entering a space between the inner ends of the knuckles, of a lock-latch held to slide in a pocket formed in the upper surface of the draw-head, a rock-shaft connected with the block and the lock-latch, a lever pivoted upon the draw-head, and links connecting the said lever with one of the knuckles and with one side of the lock-latch, substantially as shown and described.

3. In a car-coupler, the combination, with a draw-head and knuckles having a hinged connection pivoted in said draw-head, one of the knuckles being provided with a pin-opening and a link-receiving recess, of a lock-latch held to slide upon the draw-head, connected with one of the knuckles, a locking-block held to slide within the draw-head, and a rock-shaft contacting with and adapted to move simultaneously the lock-latch and locking-block, substantially as and for the purpose specified.

4. In a car-coupler, the combination, with a draw-head and knuckles having a hinged connection pivoted within the same, one of said knuckles being provided with a pin-opening and a link-receiving recess, a locking-block held to slide within the draw-head, capable of entering a space between the inner ends of the knuckles, a lock-latch held to slide upon the draw-head, provided with an opening to receive the pivotal pin of the knuckles, and a spring having a frictional bearing upon the draw-head, of a rock-shaft provided with counterpoise-weights connecting the lock-latch and locking-block, a lever pivoted upon the draw-head at one side, and a link-connection between the said lever and one knuckle and the lock-latch, all combined for operation substantially as herein shown and described.

MORGAN D. KALBACH.

Witnesses:
CHRISTIAN W. LYNCH,
THEO. M. HERR.