

(No Model.)

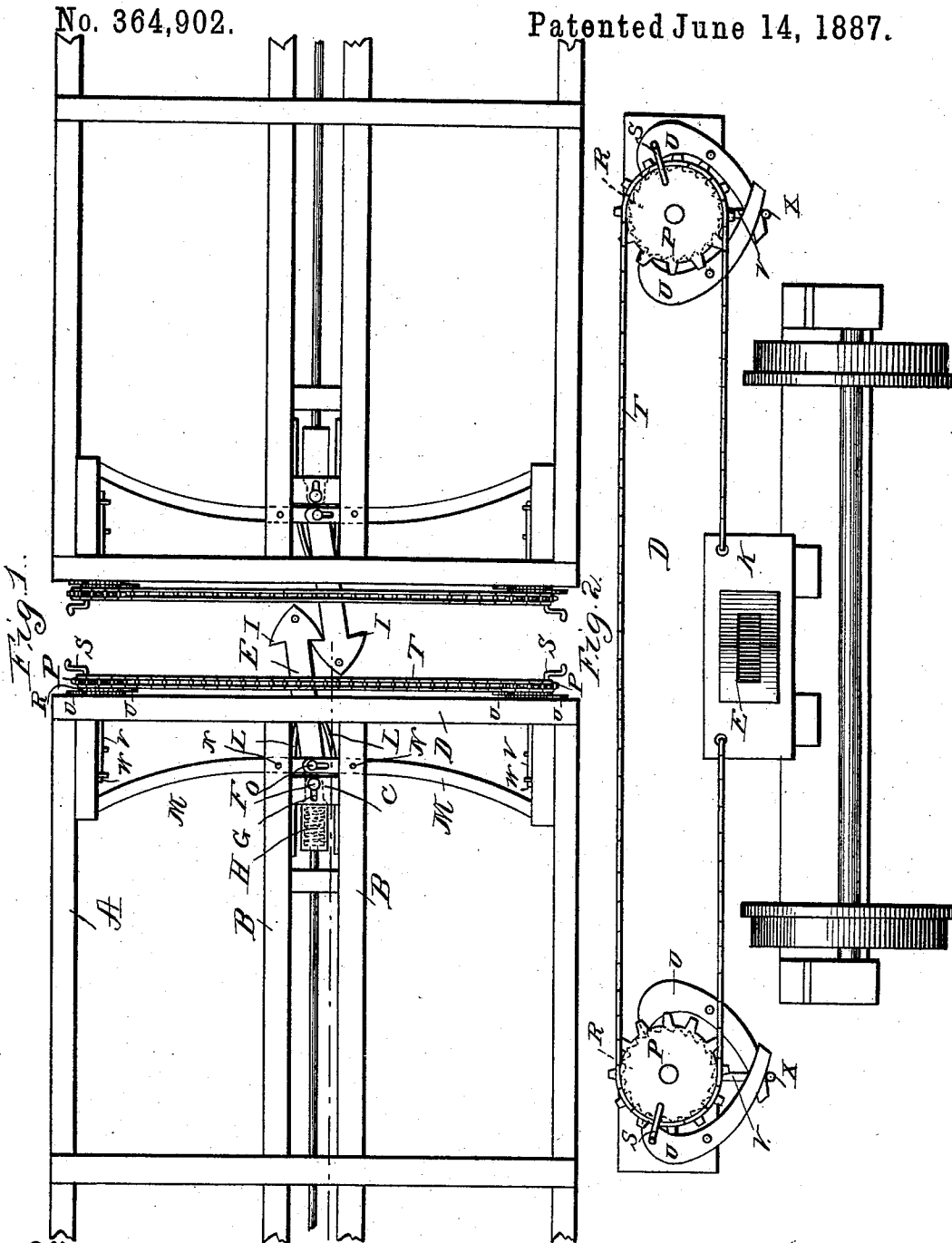
2 Sheets—Sheet 1.

C. E. CONRAD.

CAR COUPLING.

No. 364,902.

Patented June 14, 1887.



Witnesses

Wm. R. Rhein
J. C. Gainer

Inventor

Chas. E. Conrad

By his Attorneys,

C. A. Howdley

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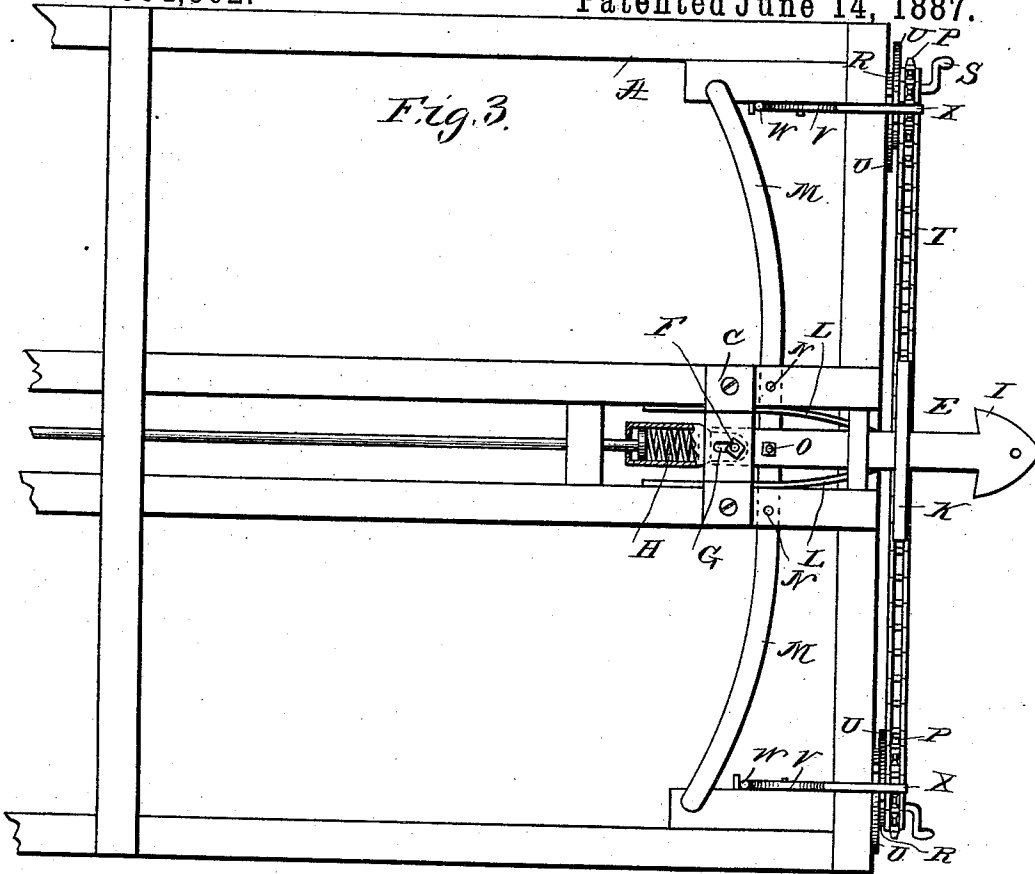


Fig. 3.

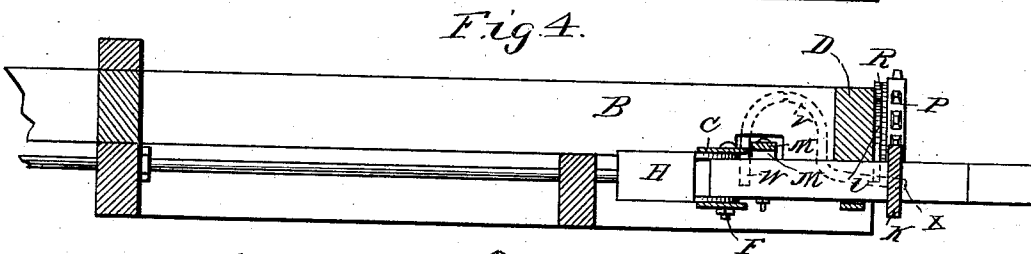
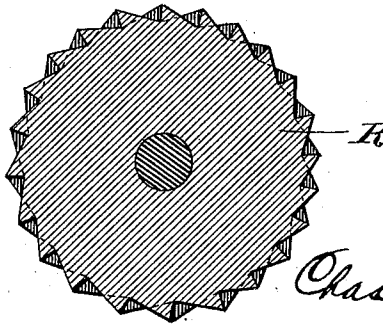


Fig. 4.

Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES EMANUEL CONRAD, OF HASTINGS, NEBRASKA, ASSIGNOR OF ONE-HALF TO SEBASTIAN C. DILLEY, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 364,902, dated June 14, 1887.

Application filed April 26, 1887. Serial No. 236,225. (No model.)

To all whom it may concern:

Be it known that I, CHARLES EMANUEL CONRAD, a citizen of the United States, residing at Hastings, in the county of Adams and State of Nebraska, have invented a new and useful Improvement in Car-Couplings, of which the following is a specification.

My invention relates to an improvement in car-couplings; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a top plan view of portions of two railway-cars provided with car-coupling devices embodying my improvements, and showing the same coupled together. Fig. 2 is an end elevation of a railway-car provided with my improved coupling device with parts broken away to disclose hidden mechanism. Fig. 3 is a bottom plan view of the same. Fig. 4 is a longitudinal sectional view taken on the line *x x* of Fig. 1. Fig. 5 is a sectional view illustrating the double ratchet-wheels.

A represents the body or platform of the car of the usual construction.

B represents a pair of longitudinal beams, which are arranged under the car or platform at the center thereof. C represents a pair of transverse plates which connect the said beams and are arranged one above the other; and D represents the transverse bar which connects the front ends of the beams B, and is arranged at a suitable distance below the bottom of the car or platform.

E represents a longitudinally-movable draw-head, which is pivoted on a vertical bolt, F, that works in longitudinal slots G, made in the plates C. Against the rear end of the draw-head bears the usual buffer-spring, H. The front end of the draw-head is provided on opposite sides with projecting barbs or shoulders I, forming hooks, and the front end of the draw-head is beveled on opposite sides to a point, as shown.

K represents a transverse plate, which is attached to the draw-head and projects from opposite sides thereof.

On the opposing inner sides of the beams B are secured the inner ends of curved springs

L, the free ends of which bear against opposite sides of the draw-head. The function of these springs is to normally keep the draw-head in line with the axis of the car.

M represents a pair of levers, which are fulcrumed on bolts N that extend through the beams B. The inner ends of the said levers are provided with slots, and are connected to the upper side of the draw-head by a bolt, O, which passes down through the said slots and enters the said draw-head. The outer ends of the said levers extend to the sides of the car.

On the front end of the car, at opposite sides thereof, are journaled sprocket-wheels P, to the inner sides of which are attached ratchet-wheels R, that are adapted to turn with the sprocket-wheels. Each sprocket-wheel is provided with a lever, S, whereby it may be turned.

T represents the sprocket-chain, which passes over the sprocket-wheels and connects the same together, and the ends of the said chain are attached to opposite ends of the plate K. To the front end of the car, on opposite sides of each ratchet-wheel, are fulcrumed pawls U, which have engaging-points at their upper ends adapted to engage opposite sides of the ratchet-wheels. The lower ends of the said pawls extend downward below the bottom of the car or platform, and cross each other, as shown.

V represents levers, which are fulcrumed to the sides of the car or platform frame, near the front end thereof, the said levers having the downward-extending arms W, arranged in the paths of the outer ends of the levers N, and being provided, further, with forward-extending arms X, arranged under the lower ends of the pawls U.

Each draw-head is provided at its front end with a recess adapted to receive the usual coupling-link, and with a vertical opening intersecting the said recess and adapted to receive the usual coupling-pin, so that a car provided with my improved coupling device may be attached to a car employing the usual form of pin-and-link coupling.

The operation of my invention is as follows: When two cars provided with my improved form of coupling devices come together, the

draw-heads strike and instantly move rearwardly, and thereby cause the levers M to strike against the arms W of the levers V, and thereby cause the arms X of the said levers to rise and strike under the crossed lower ends of the pawls, so as to disengage the said pawls from the ratchet-wheels, and thereby adapt the latter to turn. As soon as the ratchet-wheels are free to turn, the draw-heads, by reason of their inclined front ends, move laterally and past each other and cause the hooks or bars on their front sides to become engaged, as shown in Fig. 1, and thereby couple the cars together. The buffer-springs serve to normally force the draw-heads forward, and thereby cause the levers M to move rearward out of contact with the levers B, and the latter thereby disengage the lower ends of the pawls U, and as a consequence the said pawls by their own gravity engage opposite sides of the ratchet-wheels, and thereby prevent the ratchet-wheels from rotating. As the sprocket-wheels are connected to each other and to the draw-heads by means of a chain, as previously described, it follows that the draw-heads cannot move laterally and thereby become accidentally disengaged from each other while the train is in motion.

In order to uncouple the cars, they are run together, so as to force the draw-heads rearward against the buffer-springs, and thereby cause the levers M and V to trip the pawls, and thus disengage the ratchet-wheels, which leaves the sprocket-wheels and ratchet-wheels free to turn. A train attendant then turns one of the sprocket-wheels by means of its lever, and thereby forces the chain to draw the draw-head laterally a sufficient distance to cause it to disengage the opposing draw-head.

It will be readily understood that levers may be substituted for the sprocket-wheels, hereinbefore described, and connected to the draw-heads by means of chains or rods without the exercise of invention, and without departing from the spirit of my invention, and therefore I do not desire to limit myself to the use of the sprocket-wheels.

Having thus described my invention, I claim—

1. In a car-coupling, the combination of the longitudinally and laterally movable draw-head having the hooks on opposite sides adapted to engage a similar draw-head when the cars come together, levers connected to the draw-head to move the same laterally, ratchet-wheels secured to the levers and adapted to turn therewith, the pawls to normally engage the said ratchet-wheels, and thereby lock the levers and the draw-head against lateral movement, the levers V, adapted to disengage the pawls, and the levers M, connected to the draw-head and adapted to strike the levers V and cause the same to trip the pawls when the draw-head moves longitudinally, for the purpose set forth, substantially as described.

2. The combination, in a car-coupling, of the longitudinally and laterally movable draw-head having the hooks on opposite sides thereof, for the purpose set forth, the buffer-spring to normally move the draw-head forward, the springs to normally retain the same in line with the axis of the car, the levers M, connected to the draw-head and adapted to be operated by the longitudinal movement thereof, the hand-levers connected to the draw-head and adapted to move the same laterally, said hand-levers having the ratchets R, the pawls to normally engage the said ratchets, and the levers V, adapted to trip the said pawls, and having the arms W, arranged in the paths of the levers M, all combined and arranged to operate substantially in the manner and for the purpose described.

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

CHARLES EMANUEL CONRAD.

Witnesses:

L. J. CAPPS,

W. P. McCREARY.