

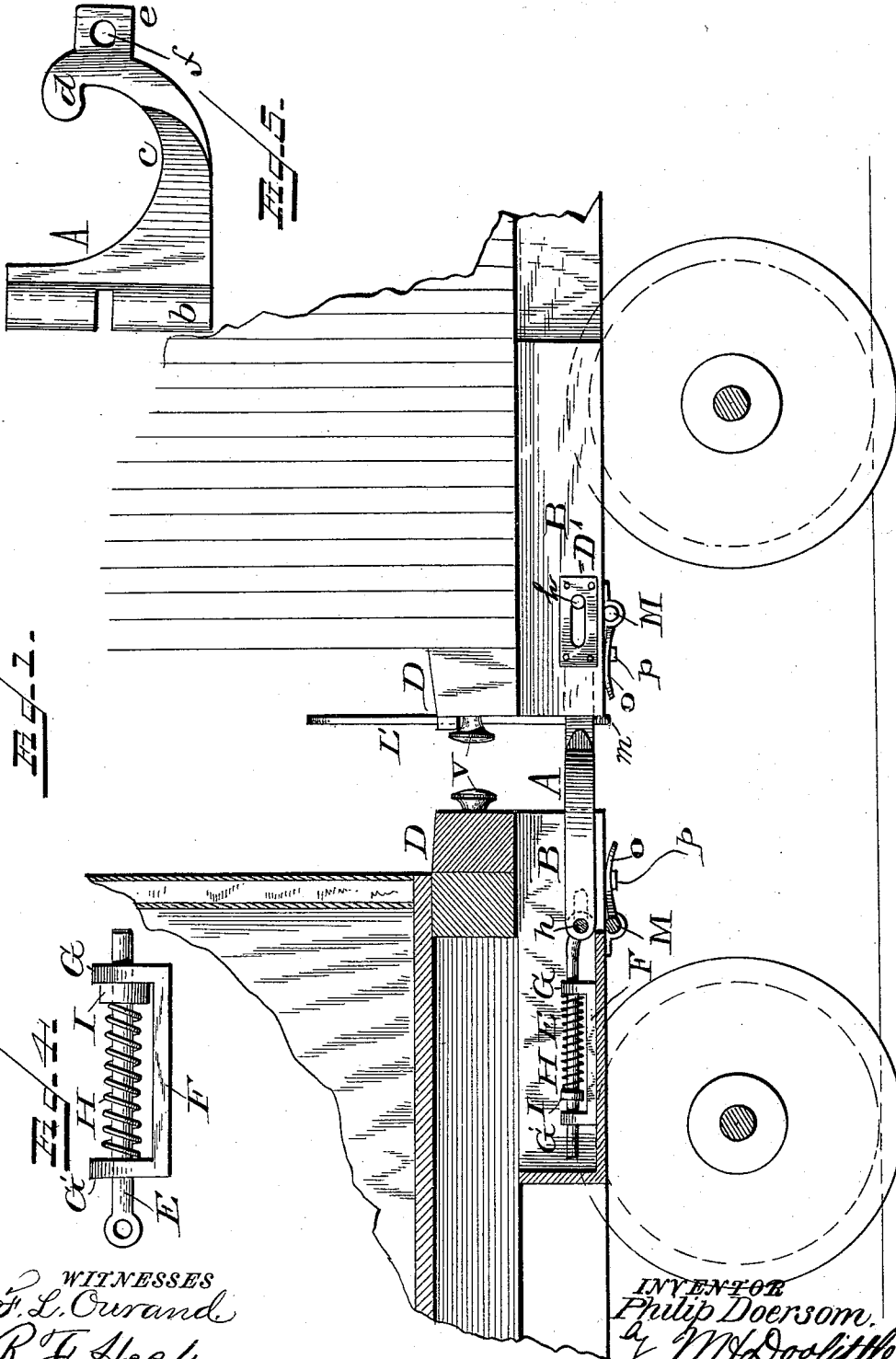
(No Model.)

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P. DOERSOM.
CAR COUPLING.

No. 487,885.

Patented Dec. 13, 1892.



WITNESSES
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R. F. Heck.

INVENTOR
Philip Doersom.
By W. M. Doolittle
Attorney

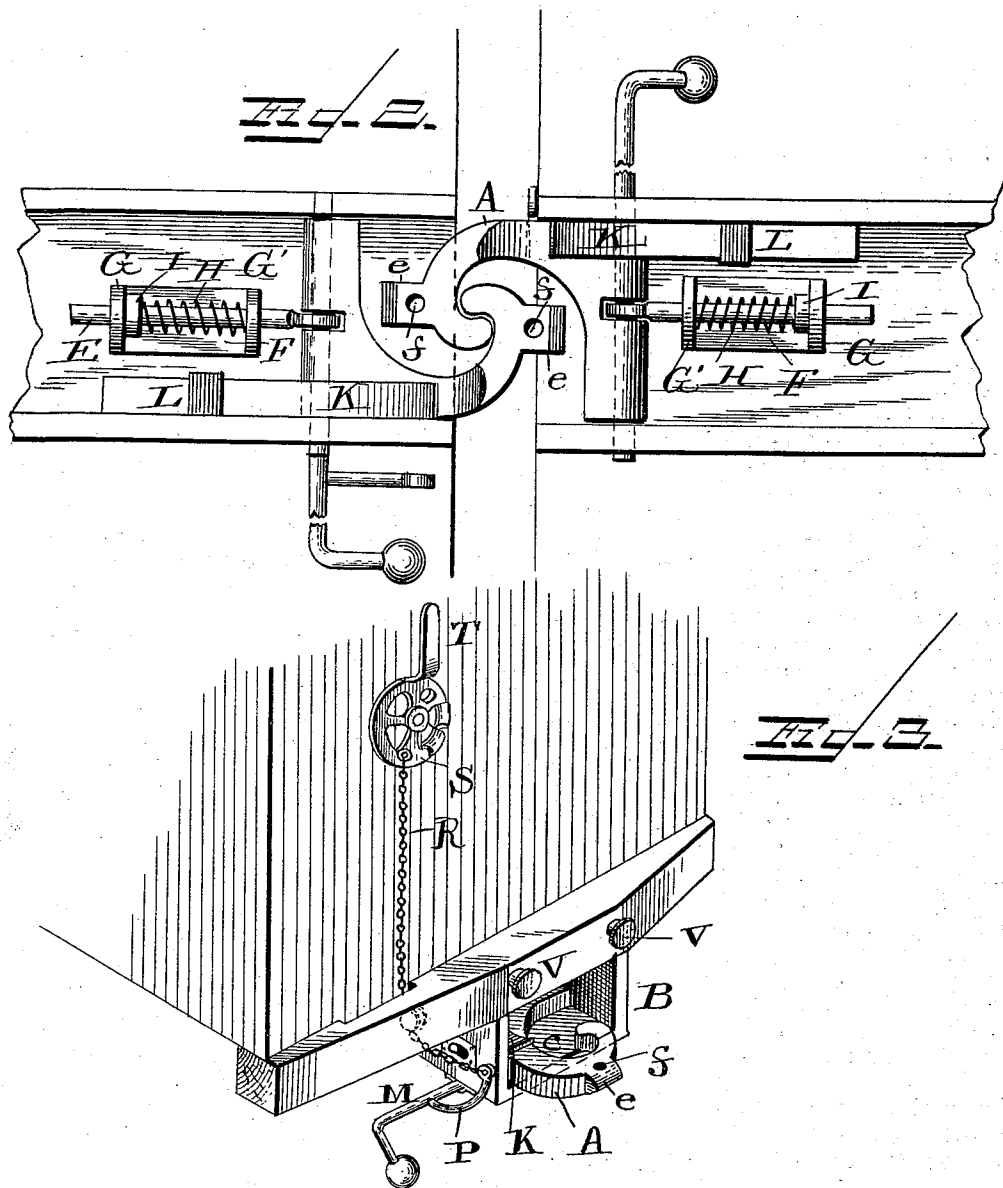
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UNITED STATES PATENT OFFICE.

PHILIP DOERSOM, OF COLUMBIA, ASSIGNOR TO JOHN A. LIVERS, OF
GETTYSBURG, PENNSYLVANIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 487,885, dated December 13, 1892.

Application filed September 27, 1892. Serial No. 446,997. (No model.)

To all whom it may concern:

Be it known that I, PHILIP DOERSOM, a citizen of the United States, residing at Columbia, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Car-Couplings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in car-couplings; and it consists of the parts and combination of parts, as hereinafter described, and particularly claimed.

The objects of this invention are to improve the means by which an automatic car-coupling is adapted to either passenger or freight cars and which are uncoupled from either side or top of the cars or from the platform, by which the cars are coupled or uncoupled on a curve, by which cars of different height may be coupled, by which are afforded room and flexibility for turning on a switch, by which couplings are set to allow the cars to be backed or side-tracked without coupling, and by which the coupling is so combined with a spring-actuated draw-bar as will remove the shock when the cars are started.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view in elevation, partly in section, of the coupling in position connecting the ends of two cars; Fig. 2, a top plan with platforms removed to show position of coupling when the cars are locked; Fig. 3, a partly-perspective and partly-sectional view of the side and end of a freight-car to show the coupling applied thereto, and Figs. 4 and 5 details.

Referring to the drawings, A represents the form of coupling-hook I have devised, and it is shown in detail in Figs. 4 and 5. It is a hinge-hook in one piece having a knuckle *b*, from one side of which extends a curved arm *c*, terminating in a scroll-like hook-head *d*. On the outer side of head *d* is a wedge-shaped projection or plug *e*, having a pin-hole *f*. Through the knuckle *b* is passed a strong rod *h*, on which the coupling-hook swings.

B is a draw-head of a box form having a flat bottom, straight vertical sides, and the platform D as a top. The hook is laid with its flat side down on the solid floor of the draw-head, and is held in the draw-head by the rod *h*, which extends through slots and into and through slotted boxes D' on the opposite sides of the draw-head. The coupling-hook has a forward-and-back movement the length of the slots.

To the pin or rod *a*, passing through the knuckle of the coupling-hook, is secured a draw-bar E. The central part of the knuckle is a slit to receive an eye of the draw-bar, through which the knuckle-pin is passed. This draw-bar is carried and held in place by means of a stationary plate F, rigidly secured to or forming part of the draw-head, and having vertical ends G G', through which the draw-bar slides. The rear end of the draw-bar moves freely in and out the end piece H of the draw-head.

On the draw-bar is placed a strong spiral spring H, which is confined between one of the stationary end pieces G and a washer I, secured to the draw-bar. When the coupling-hook and the bar are drawn forward, the spring is compressed between the stationary part G and the movable part I, and the effect is to moderate, if not entirely remove, the shock on starting the cars. When the cars are uncoupled, the function of this spring is to pull back the coupling-hook within the draw-head and hold it rigidly therein.

To hold the coupling-hooks against the floor of the draw-head and to force them down one over the other when coupling and to also aid in holding the hooks in engagement in the draw-head when coupled, I employ a stout spring-bar K, one in each draw-head, one end of which is rigidly secured to an abutment L within the draw-head, while the opposite free end rests upon the coupling-hook, as shown.

The description herein is limited to one set of mechanism on a single car, a duplicate set of course being used on the opposite car. When a duplicate set is not used, but the ordinary link and pin are used on one of the cars, the cars may be coupled by the use of a pin passed through the link and a hole F on

the head of the coupling-hook on the car having my coupling.

In coupling, when the cars are brought together, the beveled end *e* of one of the hooks
 5 A strikes the opposite duplicate hook and either slides on or under it. The hook which slides on top of the other is raised against the action of the spring-bar K, and the moment it reaches the wide space in the draw-head
 10 around and at the side of the opposite hook it is forced down on the floor of the draw-head by the action of its said spring-bar K.

The hooks are made with a large and deep curve, and sufficient space is afforded to permit them to lie side by side, when engaged,
 15 on the floor of the draw-head. Held there by the action of the spring-bars K, it is impossible for them to escape, and at the same time they are free to move laterally within each
 20 other to permit the cars to turn freely on curves. It is not necessary that the coupling-hooks shall strike each other directly in a straight line in order to couple, but one will raise the other and couple therewith if
 25 brought together at an angle.

To uncouple the cars, I employ a different set of levers, accordingly as the couplings are used on freight or passenger cars and as it is desired to couple from the platform, the side,
 30 or top of the car.

In Fig. 1 the coupling is shown applied to a passenger as well as a freight car.

L' is a lever pivoted to the side of the framework, extending down through a plate
 35 in the platform and provided at its lower end with an arm *m*, adapted to come in contact with the under side of a coupling-hook A. By pressing the lever outward the hook is raised.

40 M is a lever for raising the hook from the side of the car. It is a crank-rod passing through the sides of the frame and turning in bearings on the bottom of the draw-head. If desired, it may have a crank-handle on each
 45 end. It is provided with an arm *o*, which is adapted to be moved up through a slot in the floor of the draw-head against the under side of the coupling-hook. To prevent the lever-arm *o* from falling below the draw-head, a
 50 stop *p* is secured on the bottom of the draw-head over the end of the slot in which the arm works.

In Fig. 3 another form of lever connection is also shown to operate the coupling from
 55 the top of a freight-car, as well as from its sides. In this case the crank-lever M is provided with an outside curved vertical arm P. To the upper end of this arm is connected a chain R, and the chain is passed through an
 60 eye on the framework and up through a slot between the platform and car up to a rotating wheel S, secured on the end of the car and having a handle T, which extends above the top of the car and within easy reach of the
 65 brakeman. With any of these levers may be

used a rack, or catches, if desired, placed at any convenient place, to set the lever and hold the coupling-hook up, so as to allow cars to be backed or side-tracked without coupling.

Other forms of levers and their connections 70 may be used without disturbing the principle and mode of operation of the coupling-hooks.

V V represent rubber or spring buffers secured in any ordinary manner to the ends of 75 the platforms.

It will be seen that the pull of the cars is on the strong rod passing through the knuckle of the hinge coupling-hook; but as these rods have broad bearings in the boxes on each side 80 of the draw-head the strain is distributed over a greater surface and the rods are much stronger than the ordinary coupling-pins, so that there is far less danger of the train parting by breaking of connections. It will also 85 be seen that the coupling-hooks have a firm seat on and between rigid bearings consisting of the floor and sides of the draw-head, and are thus protected and held rigidly in place, while at the same time the lateral play of the 90 hooks between the cars is such that any ordinary amount of turning the cars on a curve is permitted without straining the couplings.

The draw-head in my apparatus is not the ordinary draw-head, which is the projecting 95 part of a draw-bar in which a coupling-pin connects with the link, but is composed of a box, as herein described, rigidly secured on the framework of the car beneath the platform. This framework supporting the box 100 consists of the top front sill W of the platform, the vertical hangers S S', their upper ends passing through the sill and screw-threaded to be rigidly connected thereto by nuts, the lower ends of said hangers similarly connected to cross-frame X, which has upwardly-extending diagonal brace-arms X', also bolted to the sill W; but this box draw-head may be otherwise secured to the platform and framework of the cars without departing 110 from my invention.

What I claim is—

1. In a car-coupling, the hinge coupling-hook A, provided with a curved and wedge-shaped head and a slitted knuckle *b*, in combination with a draw-head slotted at its sides, slotted boxes at such sides, a rod *h*, extending through the said knuckle into said boxes, and a spring draw-bar secured to the center of the rod *h*, the said rod and bar having a movement the length of said box-slots, substantially as described. 115

2. In combination with the draw-head and curved hinge coupling-hook, the spring-actuated draw-rod to which said hook is secured, 120 a flat spring-bar with one end secured within the draw-head and the other end resting on the hook to hold it down, and a lever provided with an arm to extend up through a slot in the bottom of the draw-head to engage the 130

under side of said hook, whereby the hook is raised against said spring to uncouple the car, substantially as described.

3. In combination with a box draw-head, a
5 hinge coupling-hook hung in said draw-head, a spring-bar to hold said hook down, a crank-lever extending from the side of the car and having an arm extending up through a slot in said draw-head to strike the under side of
10 said hook to raise it against said spring, a le-

ver at or near the top of the car, and a chain connecting the two said levers, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

PHILIP DOERSOM.

Witnesses:

ZACHARY T. BRITTON,
SAML. EVANS.