(No Model.) 2 Sheets—Sheet 1.

# J. N. LEITCH.

## CAR COUPLING.

No. 495,981. Patented Apr. 25, 1893.

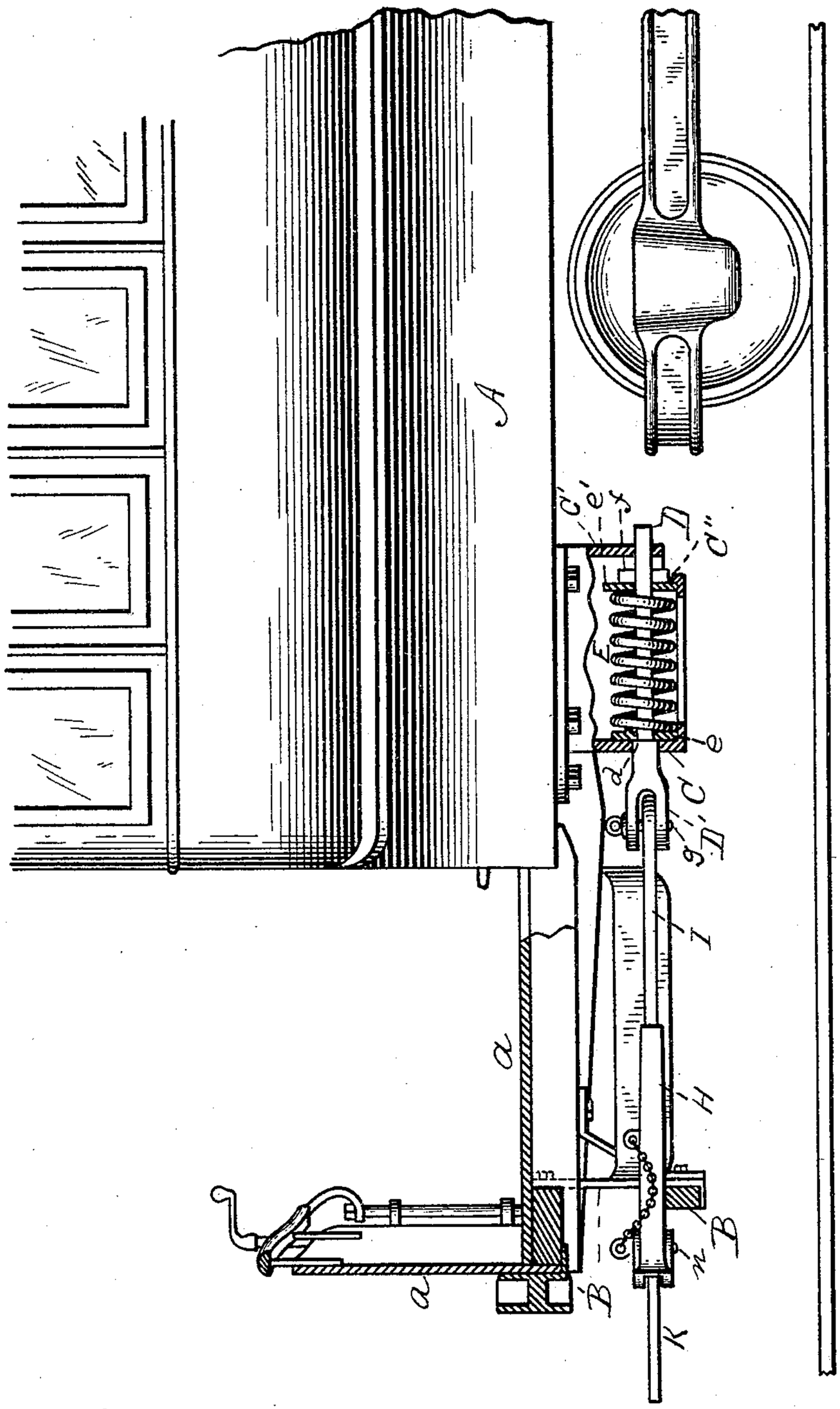


Fig. 1.

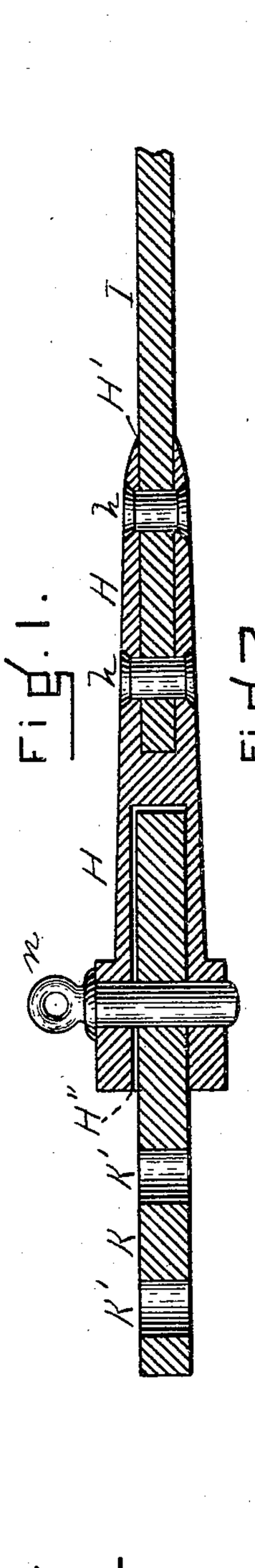


Fig. 2.

WITNESSES.

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(No Model.) 2 Sheets—Sheet 2.

# J. N. LEITCH.

## CAR COUPLING.

No. 495,981. Patented Apr. 25, 1893.

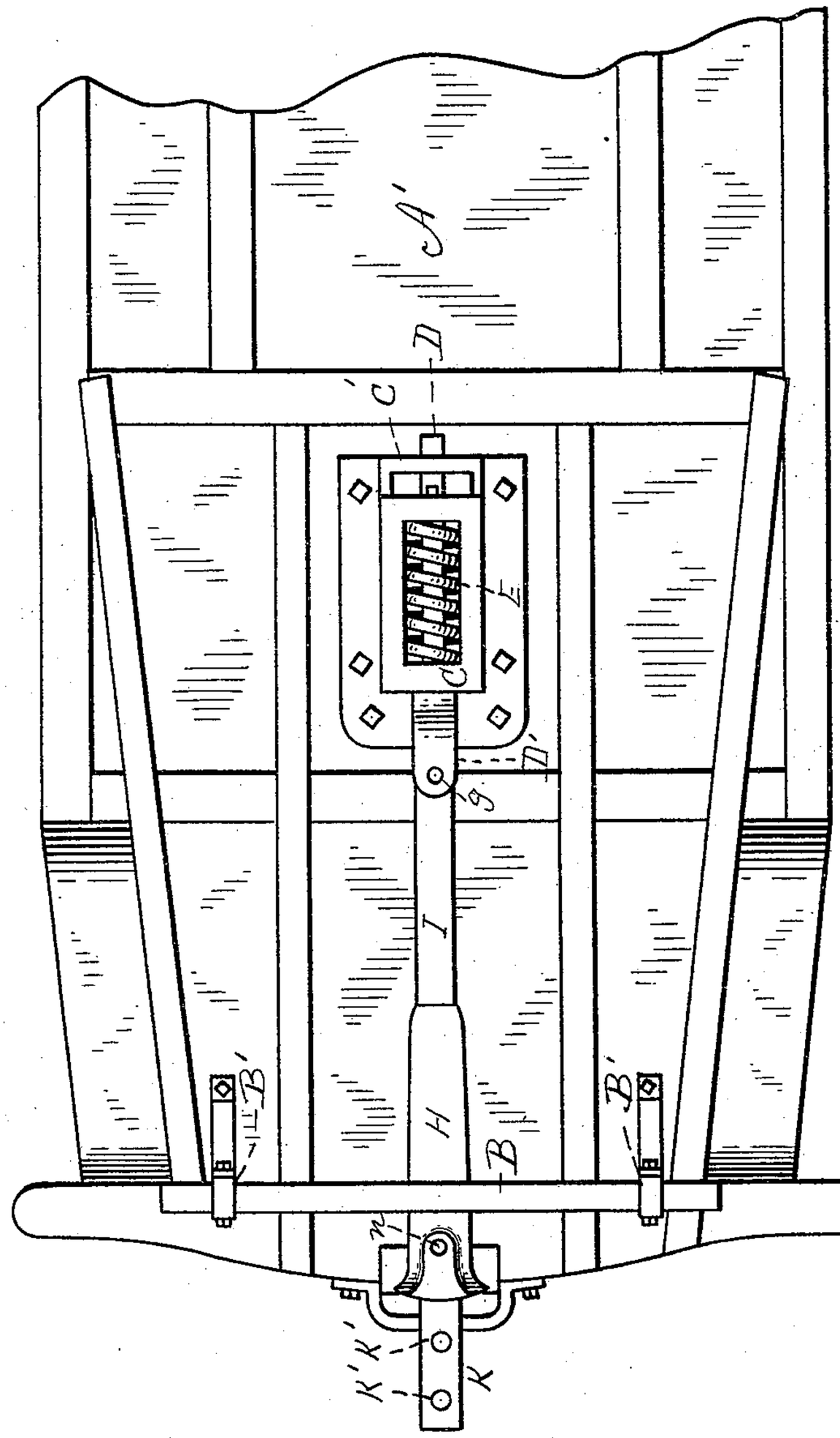


Fig. 5.

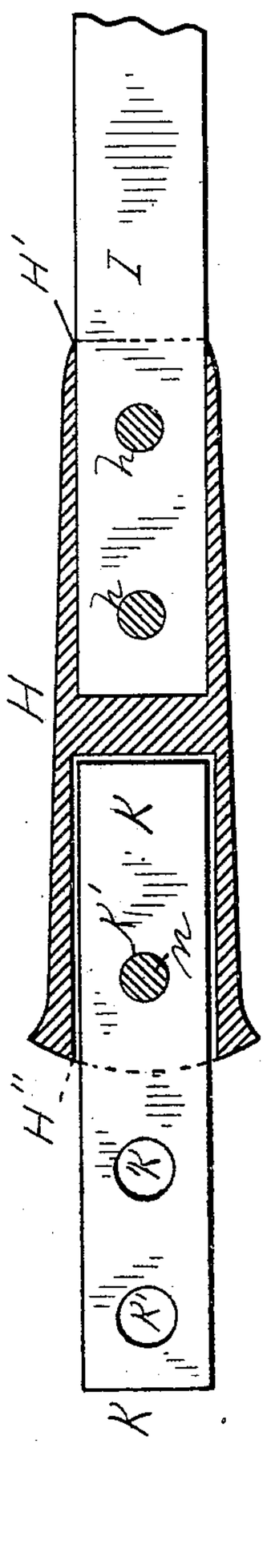


Fig. 4.

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# UNITED STATES PATENT OFFICE.

JAMES N. LEITCH, OF AMESBURY, MASSACHUSETTS, ASSIGNOR TO WILLIAM G. ELLIS, OF SAME PLACE.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 495,981, dated April 25, 1893.

Application filed January 6, 1893. Serial No. 457,535. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES N. LEITCH, a subject of the Queen of Great Britain, residing in Amesbury, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Couplings for Electric and other Cars, of which the following is a specification.

This is an improvement in couplings for electric, cable, and other cars, and it relates particularly to that class of couplings in which the draw-bar slides within a spring-box secured to the under side of the bottom of the car-body, and has a supplemental draw bar pivotally secured to its outer end, one of this style being described in Letters Patent of the United States, granted to L. Pfinst, April 22, 1890, and numbered 426,317; and the invention relates to a certain novel construction and combination of parts whereby better work is accomplished and greater economy attained in the construction, and especially whereby the box lettered P in the drawings in said patent and constituting the link, is done away with.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a side elevation of a portion of an electric car fitted up with my improved coupling, a small portion of the platform and dash-board being represented as broken out. Fig. 2 is a longitudinal vertical section of the draw-bars and coupling-link, in which my invention wholly resides, removed. Fig. 3 is a plan view of the under side of the car. Fig. 4 is a horizontal section enlarged of the draw-bars and coupling-link.

A represents a car body, *a* being the platform, *a'* the dash-board, and A' the bottom of the car. The usual cross-bar B is sustained under the platform by hangers B'.

Secured to the under side of the bottom of the car, at each end, is a metallic spring-box C open at its bottom and at its rear end. The draw-bar C is fitted to slide longitudinally through said box, and is provided with the ordinary slotted head D' after the manner of the ordinary link-and-pin draw-bar. Shoulders *d* on said draw-bar engage a rectangular plate *e* which is loose on the draw-bar and slides in the box C. A similar plate *e'* is loose on the draw-bar at the rear end of the box and engages a vertical shoulder or flange C'' on the box-bottom near the rear opening. A block or ring *f* is secured on the draw-bar between the plate *e'* and the inner end C' of the box. A stiff coiled spring E is disposed around the draw-bar within the box C, the ends of the spring being secured to suitable studs on the plates *e* and *e'*. The above construction is not new and needs no further description, it being fully described in the Letters Patent above referred to. A horizontally arranged supplemental draw-bar rests centrally on the cross-piece B and has its rear end pivotally attached to the head D' by means of a pin *g* so that when two cars are connected the draw-bars can turn when the cars are on a curve. The supplemental draw-bar consists of the socket-bar H and the bar or link I. The socket-bar H has two rectangular longitudinal sockets formed in it, viz., the socket H' in its rear end and the socket H'' in its front end. The bar I has its rear end provided with a hole to receive the pin *g*, and its front end is thrust into the socket H' and rigidly secured by pins or bolts *h*. The link for connecting two cars consists of a straight rectangular bar K provided with, say three, holes K', and one end of said link is thrust into the socket H'' and held therein by an ordinary pin *n*, while the other end is ready to be received into the corresponding socket in the supplemental bar of the car to be attached, either hole K' being used, as desired. Thus the connection is very simple, rigid, and firm, effectually preventing jarring and shaking at that point, and the cost is very low. The springs E act as cushions, as is usual in couplings of this style.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

The herein described improved coupling for electric and other cars, consisting of the combination of the draw-bar C sliding longitudinally in a spring box secured to the bottom of the car, the horizontally swinging connecting bar I having its rear end pivotally secured to the forward end of said draw-bar, the socket-bar H provided with a rear substantially rectangular opening H' into which

extends and is rigidly secured the forward end of the bar or link I, provided with a forward substantially rectangular opening H″, and with a vertical partition separating said openings, the link *k* vertically perforated at K′ and fitting in the said opening H″ in the socket-bar, and the coupling-pin *n* adapted to drop into coincident perforations in the socket-bar and link, substantially as set forth.

JAMES N. LEITCH.

Witnesses:
GEO. W. CATE,
R. GRANT ELLIS.