W. E. LEONARD.

CAR-COUPLING.

No. 178,169. Patented May 30, 1876.

Fig. 1.

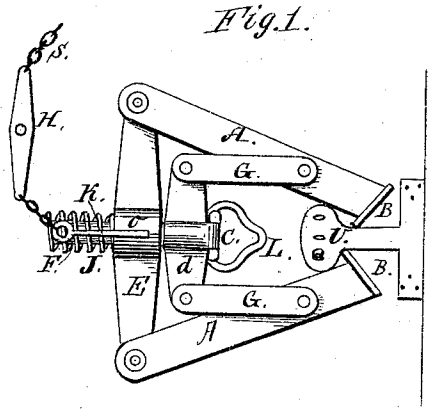
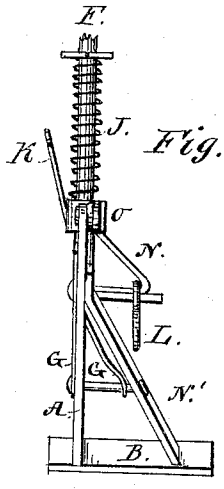
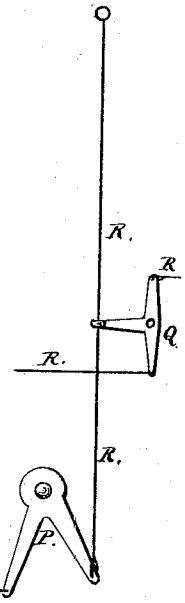


Fig. 2.





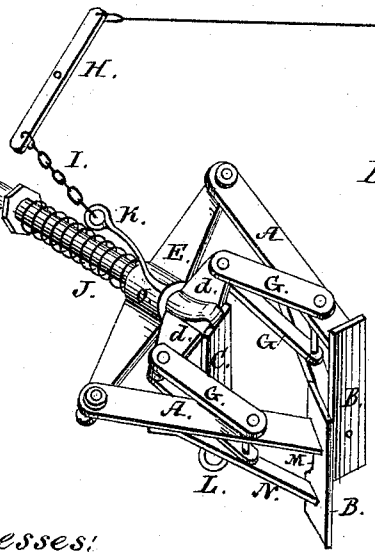


Fig. 3.

Witnesses:

D. G. Graham

Edward H Evans

Inventor:

Wm E Leonard

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM E. LEONARD, OF PLANO, ASSIGNOR OF FOUR-SEVENTHS OF HIS RIGHT TO D. GORDON GRAHAM, LOWELL M. WOODWARD, AND EDWARD H. EVANS, OF SAME PLACE, AND FRANK I. LEONARD, OF HINCKLEY, ILL.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **178,169**, dated May 30, 1876; application filed August 19, 1875.

To all whom it may concern:

Be it known that I, WILLIAM E. LEONARD, of Plano, in the county of Kendall and State of Illinois, have invented a new and useful Improvement in Car-Coupling, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

The object of my invention is to couple onto all couplers or draw-bars that have flanges or rims, by the combination, in a car-coupler, of a pair of hook-arms, A A, with beveled heads B B, which hook onto draw-bar U, as shown in the perspective view, Figure 1, of the accompanying drawing.

The coupler is illustrated more in detail in plan view, Fig. 3, and in the vertical section, Fig. 2, in which it has not been deemed necessary to show all of the working mechanism.

Draw-bar U, as shown in Fig. 1, is held between heads B B with a force proportionate to the amount of draft applied. Draft being applied to draw-bar F causes toggle bars or links G G to draw on hook-arms A A, to which heads B B are firmly attached. Hook-arms A A are pivoted to cross-bar E, which slides on draw-bar F, and is held in place by spring J.

In Fig. 3 the coupler is more fully illustrated.

R R R R are lever-rods; Q, end lever; P, perpendicular lever; H, horizontal lever; S, lever-rod; I, lever chain or rod; K, lever-pull; O, slide by means of which cross-bar E slides on draw-bar F.

Draft being applied to rings in the ends of rods R R R causes levers Q and P to draw on rod S, which draws on lever H, which draws on rod or chain I, which draws on lever-pull K, which draws on cross-bar E, causing cross-bar E to slide at O on draw-bar F, contracting spring J, and causing toggle bars or links G G G G to open outward. These toggle bars or links G G G cause hook-arms A A to open outward, so as to receive or unfasten from draw-bar U. When draft is lessened on rods R R R, spring J will expand and cause cross-bar E to slide forward on draw-bar F, causing toggle bars or links G G G to draw inward, causing hook-arms A A to come together at heads B B. *d d*, eye-lips which connect toggle bars or links G G G to draw-bar F. L is link to use when the coupler cannot be used. C, buffer; M, notch in right-hand head, to receive and raise link. Said link is not shown in drawing. N, braces from hook-arms A A to heads B B, to strengthen them.

I claim as my invention—

The combination, in a car-coupler, substantially as described, of a pair of hook-arms with beveled heads, cross-bar, and links or toggle-bars.

WM. E. LEONARD.

Witnesses:
EDWARD H. EVANS,
D. G. GRAHAM.