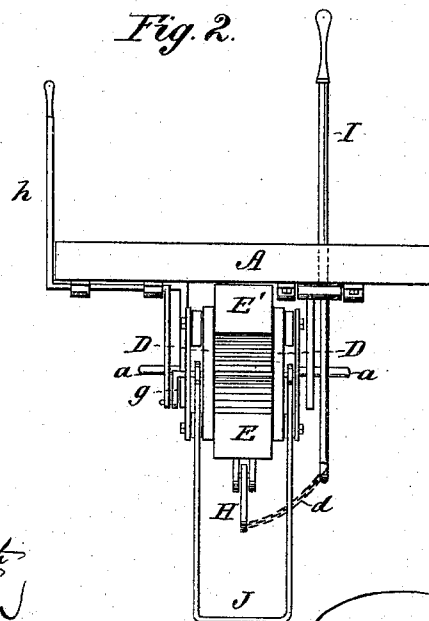
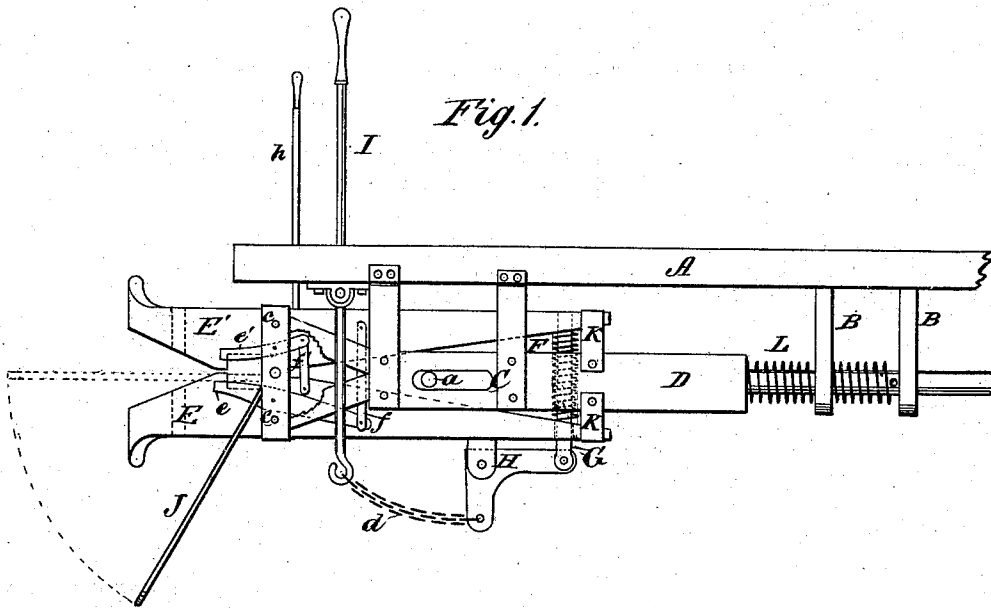


D. B. PALMER & D. C. KEPLER.

CAR-COUPLING.

No. 173,993.

Patented Feb. 22, 1876.



WITNESSES:

W. W. Hollingsworth
John C. Kemou

INVENTOR:

D. B. Palmer
D. C. Kepler

BY

Wm. V. C.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

DANIEL B. PALMER AND DAVID C. KEPLER, OF CHAMBERSBURG, PA.

IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. 173,993, dated February 22, 1876; application filed January 15, 1875.

To all whom it may concern:

Be it known that we, DANIEL B. PALMER and DAVID C. KEPLER, of Chambersburg, in the county of Franklin and State of Pennsylvania, have invented a new and Improved Car-Coupling; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a side elevation; Fig. 2, an end view.

The object of our invention is to provide an improved coupling for cars which shall cause them to automatically couple, thus doing away with the necessity of going between the cars to couple the same, and thereby obviating the great risks to life to which the train-men are exposed.

The invention consists in the particular construction of a bifurcated draw-bar, held in supports attached to the bottom of the car, with a spring in the rear, in which draw-bar are contained a pair of vertically-moving jaws, provided with permanently-attached loop-shaped links, and levers arranged for releasing the link of the opposite car, together with straps for holding the jaws in position, as hereinafter more fully described.

In the drawing, A represents the platform of a car, to the lower side of which are attached the perforated supports B B and the slotted support C for the draw-bar. D is said draw-bar, which is made bifurcated or forked at the front end to receive the vertically-moving jaws. The rear end of the draw-bar passes through the supports B B, and is backed by springs L, to render the bar elastic against the concussion when the cars are brought together. The front part of the draw-bar is provided with horizontal studs *a*, which move in the slots of support C against the action of the springs L. E E' are the hook-shaped jaws, pivoted at *e* to the draw-bar, so as to move vertically. Said jaws have their inclined faces placed together, so as to make a tapering entrance for the link, and are held together, to prevent the escape of the link, by means of the spring F, placed between the rear extensions or shanks of the jaws. Pass-

ing through the lower jaw, and rigidly attached to the upper one, is a stud, G, around which the spring F is disposed, and connected with the stud is the arm of an elbow-lever, H, which lever is pivoted to a support beneath the lower jaw. The other arm of this elbow-lever is connected, through a chain, *d*, to the lower end of a hand-lever, I, whose upper end projects above the platform of the car, in position to be readily worked for uncoupling. When the hand-lever is thrown to one side the rear ends of the jaws are brought together, and the front portion opened, so that the link can be withdrawn. With this construction alone, however, the link would catch from its gravity against the shoulder formed by the hook of the lower jaw, and to obviate this we pivot to the jaw a lifting-lever, *e*, for the link, which is pivoted to the lower, and its rear end connected by means of a bar, *f*, with the upper jaw, so that when the jaws open the front end of the lifting-lever raises the link above the rear side of the hook. A similar lever, *e'*, and rod *f'* is arranged upon the upper jaw, to prevent the link from being thrown too high, and against the upper hook. As the jaws open, then, to be relieved of the link, the levers *e e'* automatically lift and hold the link into the proper position to be withdrawn without hitching in the hooks. J is the coupling-link, of peculiar construction. It consists of a loop some eighteen inches long, pivoted at its rear end to the draw-bar, and permanently attached thereto, each car carrying one of said links at each end. This link is connected, through a crank, *g*, with a bent hand-lever, *h*, which latter serves to lift the link and hold it in proper position for entering the opposite set of jaws. The front ends of the links are made triangular or wedge shaped, so as to pass readily between the inclined jaws, and afford a flat bearing for the portion of the link against which the draft is exerted. By using links of this length and construction it will be seen that cars of different heights of draw-bar may be as readily coupled as those of the same height. When cars of different heights of draw-bars are thus coupled the link, occupying a diagonal position, would have a tendency to pull the jaws out of their parallel position with the

bottom of the car, and to obviate this displacement we confine the rear ends of the jaws in straps K, attached to the draw-bar.

To enable the devices as thus described to be used with the ordinary coupling we construct the upper jaw with a bolt-hole to receive the ordinary coupling-pin.

Having thus described our invention, what we claim as new is—

1. The combination, with the perforated supports B B and the slotted support C, of the bifurcated draw-bar D, having studs *a*, the jaws E E', pivoted therein, the link J, and the straps K, as and for the purpose described.

2. The combination of vertically-moving

jaws E E', the draw-bar D, the permanently-attached loop-link J, and the straps K, as and for the purpose described.

3. The combination of the jaws E E', the levers *e e'*, the rods *f f'*, the spring F, stud G, elbow-lever H, chain *d*, and hand-lever I, as and for the purpose described.

The above specification of our invention signed by us this 14th day of January, A. D. 1876.

DANIEL B. PALMER.
DAVID C. KEPLER.

Witnesses:

SOLON C. KEMON,
CHAS. A. PETTIT.