

2 Sheets—Sheet 1.

CAR COUPLING.

Patented Mar. 13, 1894.



Frs. Froehlich
W. J. Sankey.

Inventors

George F. Sudheimer.
Frank Thon.
Max Richter.

By Higdon & Higdon & Longan Attys

(No Model.)

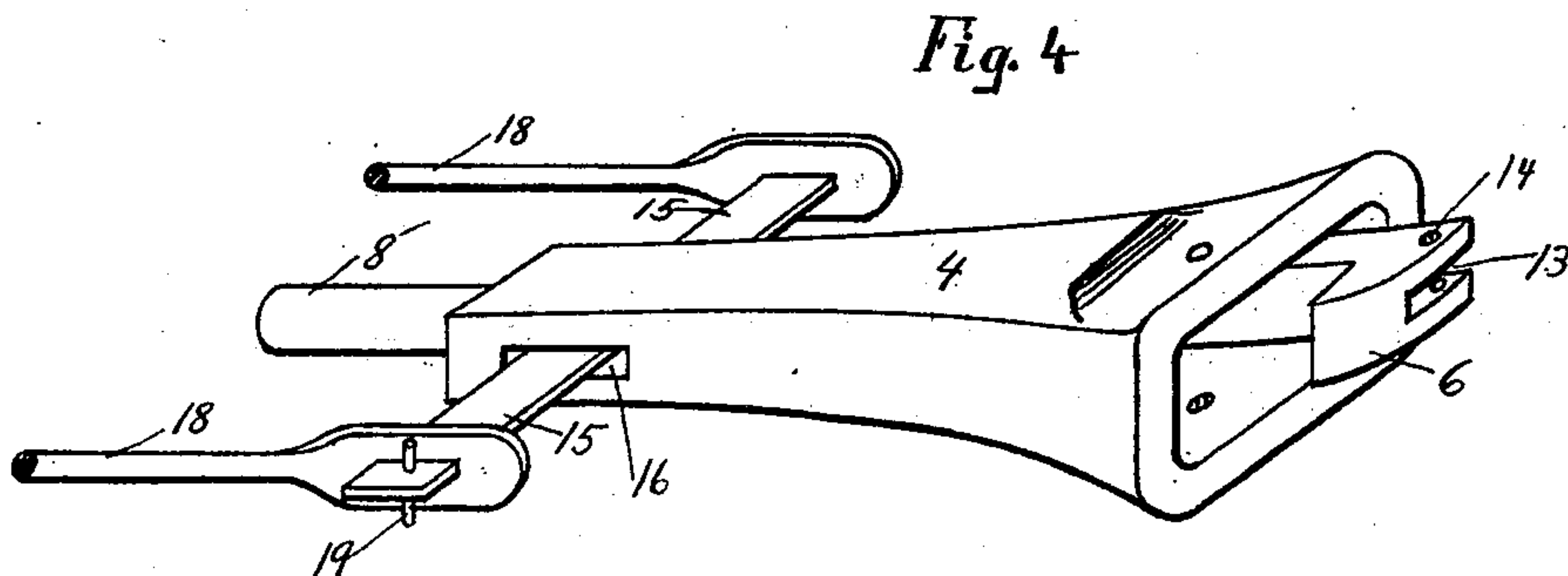
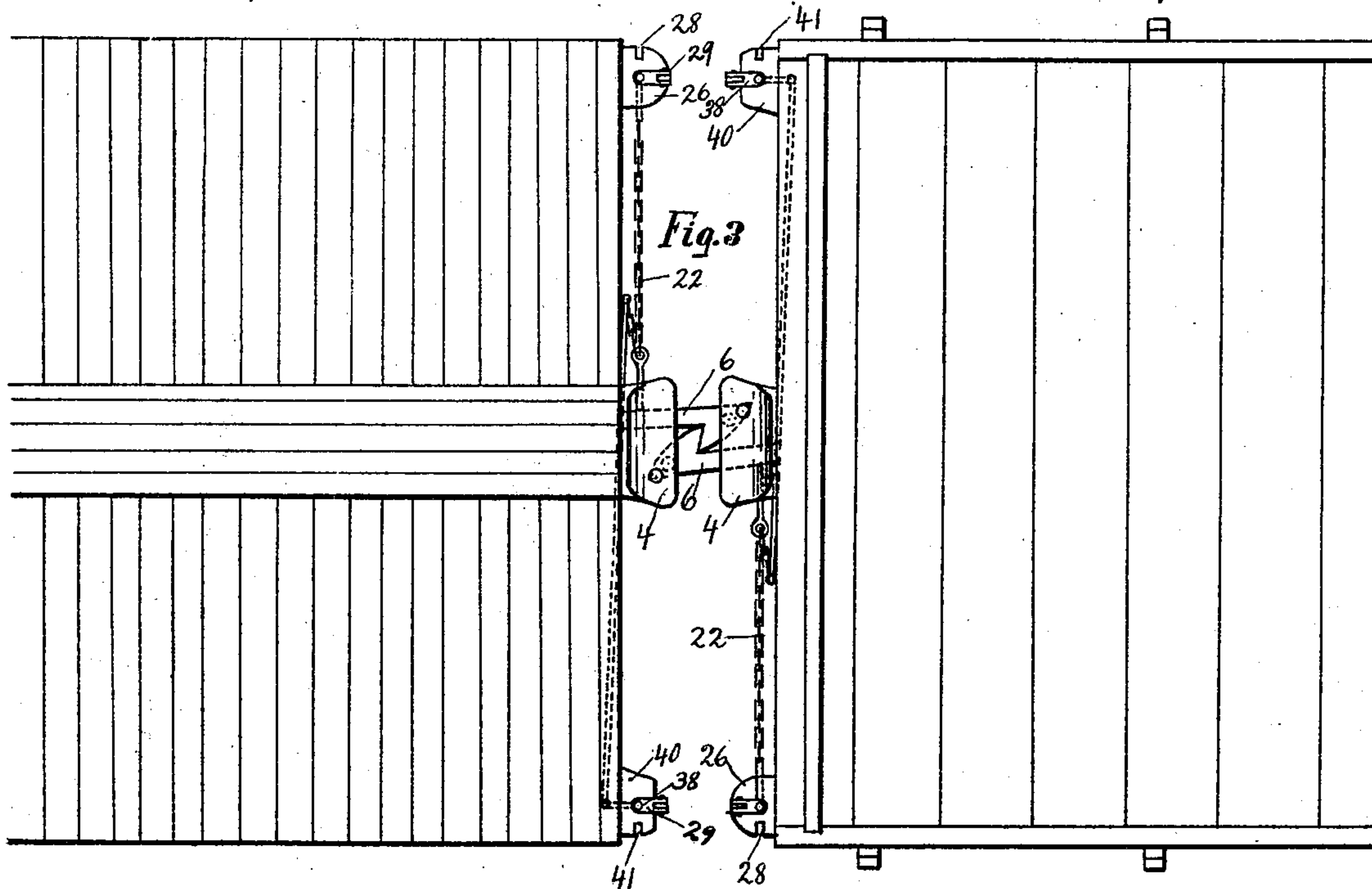
2 Sheets—Sheet 2.

G. F. SUDHEIMER, F. THON & M. RICHTER.

CAR COUPLING.

No. 516,458.

Patented Mar. 13, 1894.



Witnesses

Jos. Froehlich.

W. J. Sankey.

Inventors

George F. Sudheimer

Frank Thon

Max Richter.

By Higdon & Higdon & Sorgan, Attys

UNITED STATES PATENT OFFICE.

GEORGE F. SUDHEIMER, FRANK THON, AND MAX RICHTER, OF ST. LOUIS,
MISSOURI.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 516,458, dated March 13, 1894.

Application filed October 16, 1893. Serial No. 488,256. (No model.)

To all whom it may concern:

Be it known that we, GEORGE F. SUDHEIMER, FRANK THON, and MAX RICHTER, of St. Louis, Missouri, have invented certain new and useful Improvements in Automatic Car-Couplings, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates to an improved automatic car coupling, and consists in the novel construction, combination and arrangement of parts as will be more fully hereinafter described and designated in the claims.

In the drawings: Figure 1 is an end elevation of a car, showing our improved coupling connected thereto. Fig. 2 is a plan view of a portion of a car, showing the improved coupling applied thereto, said coupling being in longitudinal horizontal section. Fig. 3 is a top plan view of a portion of two cars, showing them connected together with our improved car coupling. Fig. 4 is a perspective view of our improved coupling, showing the same detached from the car.

1 indicates a car of ordinary construction, and is provided with the usual dead wood timbers 2 and 3, which are located on the under side of the car a suitable distance apart to allow the coupling to be located between them.

4 indicates a draw bar which is constructed with a longitudinal cavity 5, said draw bar being larger at its outer than inner end, and the cavity also being the same. The object of this is to allow a hook 6 to longitudinally move therein. This hook projects outward a suitable distance from the draw bar 4 that another hook of the same kind connected to the next adjacent car can engage it for coupling the cars. The shank 7 of the hook 6 extends longitudinally through the cavity 5, and a suitable distance outward from the rear end of the draw bar. The rear portion 8 of the shank 7 is preferably made round and is loosely mounted at its extreme rear end in a horizontal bar 9, which is located between and connected to the dead wood timbers 2 and 3.

10 indicates a plate which is formed on or fixed to the portion 8 of the shank 7 in such

a position that it will come in contact with the rear end of the draw bar 4.

Located on the portion 8 of the shank 7 between the bar 9 and the plate 10, is an expansion coil spring 11, which holds said plate against the rear end of the draw bar and is for the purpose of forming a cushion for said draw bar, and when two cars come together. Connected to the opposite side of the shank 7 from the hook 6, is a spring 12 which comes in contact with the adjacent side of the draw bar 4, and holds the shank outward in the position shown by dotted lines in Fig. 2, so that when two cars are pushed together the hooks on the separate cars will engage each other, thus coupling the cars. Formed in the front end of the hook 6 is a horizontal notch 13, which is constructed to be engaged by a link carried by a coupling of ordinary construction. A vertical hole 14 is formed in the hook 6, so that a pin can be inserted to engage said link.

15 indicates a horizontal transverse bar, which passes through a slot 16 formed in each side of the draw bar adjacent its rear end and through a suitable opening formed in the portion 8 of the shank 7. This bar also passes through slots 17 formed in the dead wood timbers 2 and 3, and each end of said bar is engaged by a horizontal bar 18 which extends along parallel with the bottom of the car and is connected to the coupling in the same manner at the opposite end of the car. These bars 18 are held in engagement with the bar 15, and prevented from coming off of said bar by a pin 19.

Connected to the opposite side of the shank 7 from the hook 6, adjacent the front end of the draw bar, is a horizontal arm 20, which passes through a slot 21 formed in the adjacent side of the draw bar. Connected to the outer end of said arm is a chain 22, which connects said arm with an arm 23 connected to a vertical rock-shaft 24 which is mounted in bearings 25 connected to the adjacent corner of the car. Connected to the upper edge of the bearing 25, and extending outward from the car, is a semi-circular projection 26, which is provided with two notches 27 and 28 in its outer periphery. Rigidly connected to the upper end of the rock-shaft 24 is a bear-

ing 29, in which one end of a lever 30 is pivoted in such a manner that the lever will engage the notches 27 or 28. When the lever 30 is in engagement with the notch 28, the hook will be in the position shown by solid lines in Fig. 2, and when the lever is in engagement with the notch 27, the hook will be in the position shown by dotted lines in Fig. 2.

31 indicates a bar which extends transversely across the car and in vertical alignment with the arm 20, and it is provided with bearings 32 connected to the under side of the dead wood timbers 2 and 3. The end 33 of the bar 31 is bent upwardly at right angles to the main bar, and its upper end is engaged by a chain 34 which engages the adjacent end of the arm 20. The opposite end of said bar 31 is bent upwardly at right angles, and its upper end is pivotally engaged by one end of a link 34^a. The opposite end of said link engages a horizontal projection 35 of a vertical rock-shaft 36, which is mounted in suitable bearings 37 connected to the adjacent corner of the car. The upper end of the rock-shaft 36 is engaged by a bearing 38 in which one end of a lever 39 is pivoted. A projection 40 is formed on the bearing 37 in which a notch 41 is formed to be engaged by the lever 39.

The operation is as follows: When it is desired of coupling two cars automatically without the aid of an operator, the operator releases the lever 30 from the notch 28 and the lever 39 from the notch 41, which will allow the spring 12 to push the shank 7 and the hook 6 over in the position shown by dotted lines in Fig. 2. When the hook is in this position, and the hook on the adjacent end of the next car is in the same position they will come in contact with each other and interlock. When it is desired to uncouple the cars while standing still, the lever 30 being in the position shown by dotted lines in Fig. 2, the operator releases said lever from the notch 27 and draws it around until it engages the notch 28 in the semi-circular projection 26, which will hold the hook out of engagement with the hook on the adjacent end of the next car. For operating the same coupler from the opposite side of the car, when the lever 39 is in the position shown by dotted lines in Fig. 2, the operator draws said lever around till it will engage the notch 41 in the projection 40 of the bearing 37.

From the above description it will be seen that the hook 6 is always moved by being drawn laterally, and is never pushed. It will be further seen that we have provided means whereby said hook may be drawn laterally out of its normal position, by an operator standing upon either side of the car. The link 34^a forms a rigid-connection between the arm 35 of the rock shaft 36 and the

horizontal sliding bar 31, upon one side of the draw-bar, and the chain 22 forms a flexible connection between the rock shaft 24 and the said hook, upon the side of the draw-bar which is opposite that upon which said rock shaft 36 is located.

What we claim is—

1. In a car coupling, the combination of a laterally movable coupling hook, a vertical rock-shaft mounted upon the car at one side of said hook, a vertical rock-shaft mounted upon said car at the opposite side of said hook, hand-levers applied to said rock-shafts by which the same may be rocked, a horizontal bar 31 mounted in bearings 32 and extending laterally with relation to the shank of said hook, one end of said bar being connected to said hook at one side thereof, a rigid connection between said horizontal bar and the rock-shaft which is mounted at one side of said hook, whereby when said last mentioned rock shaft is turned in its bearing said hook will be drawn in one direction, and a chain, forming a flexible connection between said hook and the other one of said rock shafts, whereby said hook may be drawn laterally out of its normal position by an operator at either side of the car, substantially as herein specified.

2. In combination with a car coupling, a draw-bar provided with a longitudinal cavity, a shank carrying a hook and located in said cavity, a horizontal transverse bar passing through the rear end of said draw-bar, means for holding these parts in position, and a bar 18 engaging each end of said horizontal transverse bar, and passing beneath the car parallel with and engaging a coupling at the opposite end of the car in the same manner, substantially as set forth.

3. In combination with a car coupling, a draw bar provided with a longitudinal cavity, a shank carrying a hook and located in said cavity, a spring mounted upon the end of said shank and engaging the rear end of said draw bar, a bar 9 which is also engaged by said spring, a horizontal transverse bar passing through the rear end of said draw bar, means for holding these parts in position, and a bar 18 engaging each end of said horizontal transverse bar and passing beneath the car parallel with and engaging a coupling at the opposite end of said car in the same manner, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE F. SUDHEIMER.
FRANK THON.
MAX RICHTER.

Witnesses:

W. G. SANKEY,
EDWARD E. LONGAN.