

(No Model.)

L. GRUNWALD.
CAR COUPLING.

No. 530,413.

Patented Dec. 4, 1894.

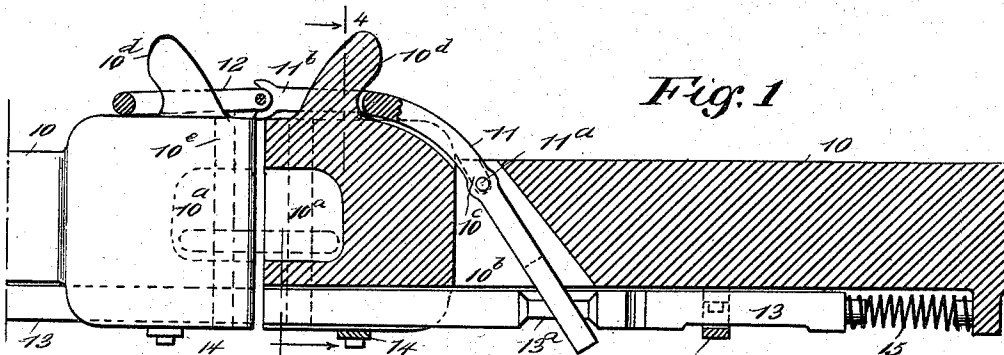


Fig. 1

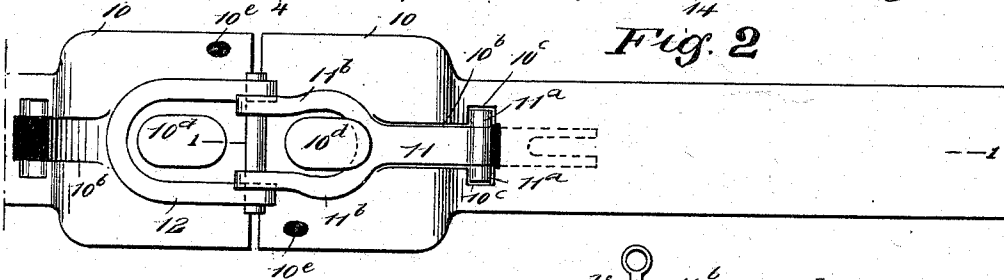


Fig. 2

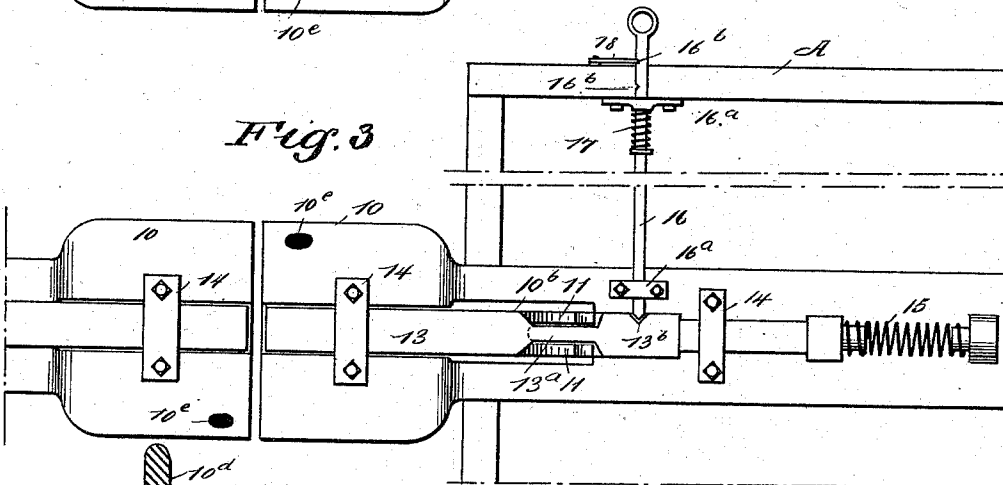


Fig. 3

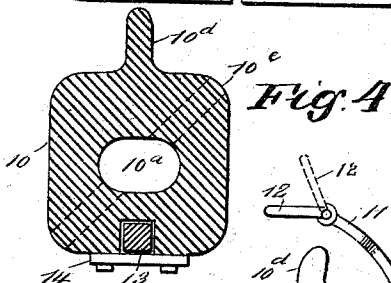


Fig. 4

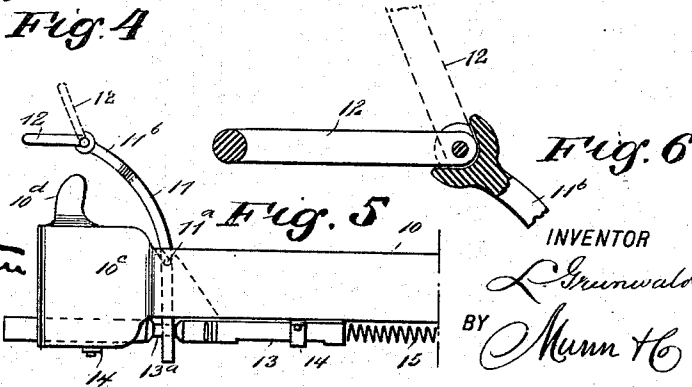


Fig. 5

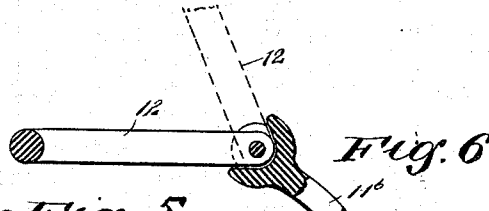


Fig. 6

WITNESSES:
John A. Bergelson
H. P. Patton

INVENTOR
L. Grunwald
BY Munn & Co
ATTORNEYS.

UNITED STATES PATENT OFFICE.

LUDWIG GRUNWALD, OF TOLEDO, ASSIGNOR OF ONE-HALF TO CHARLES LANG AND DANIEL FLATH, OF NORWALK, OHIO.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 530,413, dated December 4, 1894.

Application filed September 27, 1894. Serial No. 524,288. (No model.)

To all whom it may concern:

Be it known that I, LUDWIG GRUNWALD, of Toledo, in the county of Lucas and State of Ohio, have invented a new and Improved Car-Coupling, of which the following is a full, clear, and exact description.

My invention relates to an improved car coupling of the hook and link type, and has for its objects to provide a novel, simple car coupling of the type indicated, which will automatically connect two cars having the improvement, and afford means for a safe and speedy detachment of two coupled cars from sides of the same, or a locked connection of two of the improved couplings if desired.

To these ends my invention consists in the construction and combination of parts as is hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a sectional side view in part of one of the improved couplings in coupled connection with the forward portion of a similar coupling, the section being taken on line 1—1 in Fig. 2. Fig. 2 is a plan view in part of two couplings having the improvements. Fig. 3 is a reverse plan view of main portions of two couplings having features of the improvement, one coupling being shown in place on a car frame in part. Fig. 4 is a transverse sectional view on the line 4—4 in Fig. 1. Fig. 5 is a side view of the main portion of a car coupling having the improvements, the working parts being adjusted for a coupled connection with a similar coupling; and Fig. 6 is an enlarged partly sectional side view of a novel coupling link and the drawbar portion that are parts of the invention.

The drawhead 10 comprises an elongated metallic block, which is rectangular in cross section of its body, that is enlarged at the forward end to permit said front portion to be recessed, as shown at 10^a, in Figs. 1 and 4.

At a proper distance from the front transverse wall of the drawhead 10, a slot 10^b is formed in the drawhead body at its transverse center, said slot being produced in a vertical plane intersecting the upper and lower walls of the drawhead. Preferably the slot 10^b is formed as shown in Fig. 1, having its front

wall vertical and its rear wall sloped upwardly and forwardly, thereby gradually increasing the dimension of the slot lengthwise and from the top to the bottom of the same, this provision being made to facilitate the introduction and free vibration of the drawbar which will be described.

The drawbar 11 is an elongated billet of metal, proportioned in length and other dimensions to afford effective service, its thickness being gaged to suit the width of the slot 10^b in which it is loosely sustained when in use.

Two opposite trunnions 11^a are formed on or secured to the drawbar 11 at such a distance from its lower end, that said trunnions will be adapted to slide down in the opposite grooves or channels 10^c, that are formed in the side walls of the vertical slot 10^b from the upper side of the drawhead, as is shown by dotted lines in Figs. 1 and 5.

The drawbar 11 is bent so as to allow its upper portion to project forwardly a proper degree when the trunnions 11^a are seated in the bottoms of the channels 10^c, and on said upper end portion a furcation is produced, affording two spaced limbs 11^b that are preferably bent outwardly and then forwardly as is shown in Fig. 2, thus producing an open link.

On the top wall of the drawhead 10 between the front wall and slot 10^b an upwardly and rearwardly curved draft lug 10^d is formed, the location and degree of curvature given to said part being such as will allow the furcated portion of the drawbar 11 to pass freely over the lug when said bar is rocked on its trunnions so as to depress the limbs 11^b. The ends of the limbs 11^b are preferably shaped as shown most clearly in Fig. 6, each being enlarged and recessed on the outer sides to permit the introduction therein of the rounded ends of a U-shaped draft link 12, that is pivoted by said ends to the recessed ends of the limbs 11^b, as is represented in Fig. 2. The recesses of the limbs 11^b are open at the front to permit a limited vibration of the link 12, as is indicated in Figs. 6 and 7.

The lower side of the drawhead 10 is longitudinally channeled at its transverse center to receive the pusher bar 13 and permit it to slide freely. The bar 13 is substantially

rectangular in cross section, and is supported free to slide by the transverse clip plates 14, that are secured on the lower side of the drawhead, at suitable points for the proper retention of the pusher bar in the longitudinal channel of the drawhead.

The pusher bar 13 is forwardly pressed by the spiral spring 15, which has its rear end connected with the drawhead, and its forward end attached to the rear terminal of the part 13, the expansion of the spring tending to forwardly project the bar when free to do so, and thus advance the end of said pusher bar a short distance in front of the drawhead 10, as is shown in Fig. 5.

The pusher bar 13 is reduced in the diameter of its body for a proper length as at 13^a producing shoulders at each end of said reduced portion, and as is represented by dotted lines in Fig. 2, the drawbar 11 has its lower end slotted to form forked members, which latter are designed to straddle the portion 13^a of the pusher bar when the drawbar is fully inserted in the slot 10^b.

At one side of a car having the improved car coupling secured thereon, there is a locking bar 16, supported to slide on the car frame A by suitable boxes 16^a, as shown in Fig. 3. Said locking bar is projected toward the pusher bar 13 at right angles thereto, by a spring 17 that encircles the locking bar, and has its ends engaged with a collar on the piece 16 and also with a portion of the car frame or a piece such as one of the boxes 16^a that is attached to the car frame. The end of the locking bar 16 that is adjacent to the pusher bar 13 is made V-shaped to enter a mating notch formed in the side of the pusher bar, the location of said notch 13^b being arranged with regard to the front end of the pusher bar so that the locking bar 16 will only enter the notch mentioned, when the pusher bar is rearwardly slid, thereby removing the projected end of the pusher bar from in front of the drawhead.

A latch plate 18 or an equivalent locking device, is provided to retain the locking bar 16 engaged with the pusher bar 13, or hold it withdrawn from the latter against the stress of the spring 17. Said plate when properly manipulated enters one of its ends in either of the spaced notches 16^b formed in the side of the bar 16, which serves to effect the desired adjustment, the bar 16 having a suitable handle piece formed on its outer end to facilitate its sliding manipulation.

The position of the drawbar 11 indicated in Fig. 5, is assumed when the coupling is uncoupled, the upward and rearward rocking movement of the curved upper part of the drawbar, whereon the integral link and pivoted draft link 12 are located, being manifestly produced by the forward sliding movement of the pusher bar under stress of the spring 15, the loose engagement of the forked lower end of the drawbar with the rear terminal shoulders of the reduced portion 13^a,

aiding to effect such a relative adjustment of parts.

When two cars having the improved couplings are to be coupled together, it is essential for the proper operation of the device that the drawbar 11 in one drawhead be removed, so as to enable the drawbar in the approaching coupling to securely couple with the approached drawhead.

The coupling operation is as follows: Assuming that the drawbar 11 is in elevated adjustment and the pusher bar 13 forwardly projected, it will be seen, that the impinge of the two projected pusher bars on approaching car couplings of the improved construction, will cause the bar 11 to rock downwardly and locate the integral link formed by the limbs 11^b over the draft lug 10^d, and at the same time cause the draft link 12 to encircle the lug on the adjacent drawhead, as shown in Figs. 1 and 2, the limited pivotal movement of said link permitting it to properly engage with the lug. When draft strain is applied to the coupled drawheads 10, the peculiar formation of the integral draft link on the drawbar, and of the pivoted link 12, serves to throw the pulling strain on these links and on the lugs 10^d, the depending portion of the drawbar being relieved from applied draft force, as it will be seen that when the link 12 is forwardly drawn, the trunnions on the drawbar will slide upwardly in the channels 10^c, and permit the upper forked portion of the drawbar where the limbs 11^b are produced, to have contact with the draft lug that is embraced by said limbs. The locking bar 16 is left in a condition free to be forced toward the pusher bar 13 by the spring 17, when a coupling is to be effected between two of the improved car couplings, so that the impinge of the front ends of the pusher bars on each other, will move said bars rearwardly, and allow the locking bar to engage its inner end with the notch in the side of the pusher bar, which being effected, the bar 16 may be secured in a locked condition by an adjustment of the latch plate 18, as before explained.

The recesses 10^a in the drawheads 10, shown by full and dotted lines in Fig. 1, are provided to afford means for coupling two of the improved car couplers together with a common link and two pins, the latter being introduced in perforations 10^e, that are diagonally formed in the drawheads as shown by dotted lines in Fig. 4, this provision being of service only in case of accident to parts of the improved couplings, or to couple a drawhead having the improvements, with a common link and pin car coupling.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with a drawhead, having an integral draft lug on top near the front, of a drawbar adapted to rock in a slot of the drawhead and forked to embrace said draft

lug, and a draft link pivoted on the forked limbs of the drawbar to engage a mating draft lug on another drawhead, substantially as described.

2. The combination with a drawhead, vertically slotted near the front end, and having a draft lug on top curved rearwardly in front of the slot, of a curved drawbar adapted to rock in the vertical slot and having its upper end forked to embrace the draft lug, a draft link pivoted on these forked limbs, and means to rock the drawbar from the front of the drawhead, substantially as described.

3. The combination with a drawhead, vertically slotted near the front end, and having a curved draft lug in front of said slot, of a curved drawbar forked on both ends and pivoted so as to rock and rise in the vertical slot, a draft link pivoted to the forked limbs on the upper end of the drawbar, and a longitudinally extending spring pressed pusher bar below on the drawhead and loosely engaged by the lower forked end of the drawbar, substantially as described.

4. The combination with a drawhead, vertically slotted near the front end, having a curved draft lug in front of said slot, of a curved drawbar slotted at the lower end, and pivoted so as to rock and rise in the slot, two forked limbs forming an open link on the upper end of the drawbar, a U-shaped draft link

pivoted by its ends in laterally recessed ends of these forked limbs, a longitudinally slidable pusher bar on the lower side of the drawhead loosely engaged by the lower slotted end of the drawbar, a laterally projected spring pressed locking bar adapted to engage a notch in the pusher bar, and means to secure the locking bar in or out of said notch, substantially as described.

5. The combination with a drawhead, having an upwardly and rearwardly curved draft lug on top near the front end, and vertically slotted behind said lug, the slot having opposite channels in its sides extending from above downwardly and rearwardly, of a curved drawbar having trunnions which engage said channels, two forked limbs on the upper end of the drawbar, which limbs are each openly recessed on their ends at outer sides, a U-shaped draft link pivoted in said recesses a forked lower end on the drawbar, a forwardly spring pressed pusher bar having a reduced portion loosely engaged by said forked lower end, and a locking device adapted to retain the pusher bar retracted, substantially as described.

LUDWIG GRUNWALD.

Witnesses:

CHRIS FERNER,
MAX HENNING.