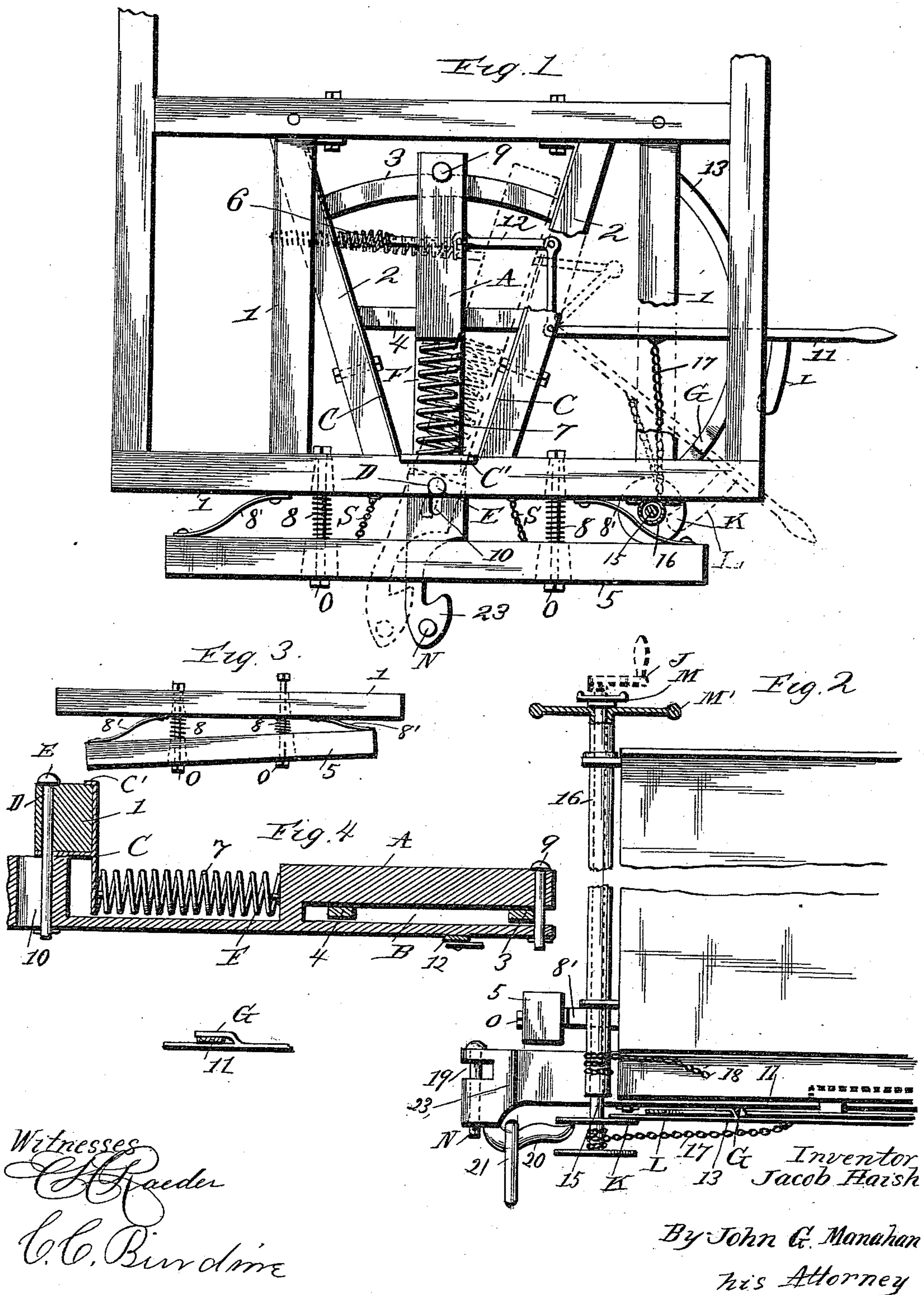


J. HAISH.
CAR COUPLING.

Patented Apr. 1, 1890.



UNITED STATES PATENT OFFICE.

JACOB HAISH, OF DE KALB, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 424,473, dated April 1, 1890.

Application filed January 4, 1890. Serial No. 335,892. (No model.)

To all whom it may concern:

Be it known that I, JACOB HAISH, a citizen of the United States, residing at De Kalb, in the county of De Kalb and State of Illinois, have invented certain new and useful Improvements in Car-Couplings; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

15 My invention relates to improvements in car-couplers; and the object thereof is to provide an attaching and disengaging mechanism which can be controlled and operated from the side of the car and also from the top
20 thereof.

The objects of my improvements are, first, to provide a coupling which shall automatically engage and which can be disengaged, as aforesaid, without passing or being between
25 the cars; second, to afford facilities for disengaging said coupling at the ordinary brake-wheel located on the deck of the car; third, to raise the buffer to the same horizontal plane with the lower frame of the car, and thus bring
30 the point of concussion opposite the lower portion of the car, and thereby also provide room for the operation of the coupler under said buffer; fourth, by extending the buffers to nearly the width of the cars and seating the
35 same upon suitable springs to form a platform between the cars above the couplings, and thus prevent accidents from any casual falling of persons between the cars; fifth, to constitute the draft-bar a coupling in itself and
40 pivotally seat said bar in a horizontal plane near its forward end, and to afford the said bar two draft-points with an elastic seat between them; sixth, to adapt said coupling for use with cars provided with the ordinary pin-
45 and-link coupling. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a horizontal section of an ordinary car in the line of the upper surface of
50 the lower portion of the frame thereof, exhibiting the construction, locality, and operation of my improvements, with the lateral move-

ments indicated in dotted lines. Fig. 2 is an oblique side elevation of a portion of my improvements. Fig. 3 exhibits the general rela- 55
tive position of the buffers in rounding a curve. Fig. 4 exhibits details of the several parts employed.

As my invention is applicable to any form of freight-car, and the mode of construction 60
of the latter is well known, I do not deem it essential to show or describe the car any further than to render intelligible the location, construction, and operation of my improvements. 65

The parts numbered 1 1 are the horizontal timbers constituting the bottom of the main body of the car. Under the frame 1 are securely fastened the diagonal braces or hounds 2. An iron cross-piece 3 extends from one of 70
the hounds 2 to the other, near the inner end of said hounds, and forms the support for the rear end of the draft-bar A, whose forward end performs the function of a coupling. A portion of the draft is also against the cross- 75
bar 3, as hereinafter described, and said bar also serves as a slide or way for the lateral oscillation of the rear end of the draw-bar A. A shorter cross-bar 4 is placed horizontally a short distance in front of the bar 3 and passed 80
through the horizontal slot B in the draw-bar A and forms a central support therefor. The hounds 2 are re-enforced on their inner sides by an iron plate C, having convergent 85
sides and suitably bolted to the inner face of said hounds, and also against the inner face of the end cross-sill 1. The plate C at its outer end is provided with a transverse flange C', which engages the upper inner angle of said sill 1. A vertical pin-hole D is 90
formed centrally in the forward end of the plate C and in the front edge of said sill 1, into which a pin E is passed through a longitudinal slot 10, formed in the forward portion of the draw-bar A. A strong spring 7 is 95
seated in a longitudinal slot or recess F in the draw-bar A, having its rear end abutting against and suitably attached to the inner end of slot F and its front end against and suitably attached to the transverse portion 100
of the plate C. When the spring 7 is in a normal position, it draws the outer end of the slot D against the pin E. When the draft is applied, the lengthwise compression of the

spring 7 permits the draw-bar to be drawn slightly outward, when the pin E will be engaged by the inner end of the slot D, and a vertical pin 9 in the inner end of the draw-bar A will be drawn up against the rear wall of the bar 3. The spring 7 thereby graduates the draft at its initiative until the pins E and 9 are engaged as aforesaid, when thereafter the draft is upon both of said pins. The pin E also serves as a pivot for the engagement of the clutch head or coupling 23, formed on the outer end of the draw-bar A, by the lateral oscillation of said draw-bar. A strong spring 6, attached at one end of the hounds 2 and at the other end to the draw-bar A, near the rear end of the latter, holds the draw-bar A in a position parallel with the car. A bell-crank lever 11 is suitably fulcrumed at its angle to the outside of one of the hounds 2 or to one of the sills 1, oppositely to spring 6, and has its free or lever end extended beyond the adjacent side of the car convenient for grasping by the operator when on the ground. The opposite end of the lever 11 is pivotally attached to one or more toggles 12, connecting said end with the adjacent side of the draw-bar A. A slide 13, suitably placed beneath the car under the lever 11, serves as a guide and support for the latter in its oscillations. When the lever 11 is drawn forward, it draws the inner end of the draw-bar A toward that side of the car, and, the coupling head or jaw 23 being projected in the same direction, the uncoupling is thereby effected. A lug or depression G, formed on the slide 13 at the forward reach of the lever 11, serves to engage and hold the latter at that point and the jaw 23 in the position of disengagement.

The usual vertical brake-shaft 16, I construct of hollow gas-pipe and project a rod 15 down the inside of said pipe, and from the rod 15, where the latter projects below the gas-pipe 16, I extend a chain 17 to an intermediate point on the lower end of the lever 11. By using a crank J, seated on the upper end of the rod 15, where the latter projects above the gas-pipe 16, the operator can by winding the chain 17 on the rod 15 draw the lever 11 forward and uncouple the cars from the top of the latter. On the rod 15, just above where the chain 17 winds, there is rigidly seated a horizontal annular plate K. A short horizontal arm L is rigidly attached to the lever 11, and when the latter is thrown forward the arm L rests on the upper surface of the plate K. An annular flange is formed around the upper end of the gas-pipe 16 on the upper surface of the usual brake hand-wheel M', and the crank J being so attached to the upper end of the rod 15 as that said crank may have a movement in a vertical plane, it can be used as a lever and the flange M as a fulcrum for the vertical raising of the rod 15 sufficiently to lift the lever 11, through the medium of the arm L, out of engagement with the lug or depression G, and thereby the op-

erator, when on the top of the car, may uncouple the car or set the draw-bar A to resume its normal position for automatic coupling. The gas-pipe 16, near its lower end and above the plate K, is utilized for winding the ordinary brake-chain 18. The coupling-head 23 of the draw-bar A is formed with the usual beveled head on the outside of the jaw thereof, and when such beveled surfaces come in contact in the coupling of the car the concussion moves the respective draw-bar outwardly a sufficient distance to allow the coupling to be automatic, the spring 6 first yielding enough for that purpose and drawing the coupling-heads into engagement and holding them there. The outer extremity of the head of the draw-bar A is furnished with the horizontal slot 19 for the reception of the ordinary link in case the opposite car is furnished only with the ordinary link-coupling, a pin N being seated vertically in the outer extremity of the draw-bar A, through slot 19, for that purpose. To provide for coupling cars having only said ordinary link and too low to make the coupling in the slot 19, I form an inwardly-projecting hook 20 on the lower surface of the head of the draw-bar A, upon which the usual link 21 can be placed and then coupled in the ordinary way to such adjacent lower car.

The action of the lever 11, before described, is sufficient to uncouple the car by the lateral movement of one of the draw-bars A. Therefore each car will be furnished with but one lever 11 and its attachments at each end thereof, such levers being placed on opposite sides of the car, so that the uncoupling can be effected or automatic coupling permitted from either side of the latter.

The buffer 5 is placed in the same horizontal plane with the end sill 1 of the car-frame, and in a normal position is parallel therewith and a slight distance therefrom. The buffer 5 is extended nearly the entire width of the car, and is supported by two horizontal bolts O, seated, respectively, a suitable distance each side of the location of the draw-bar A. The bolts O pass horizontally through the sill 1 and buffer 5, and on said bolts, in the interval between said sill and buffer, there are seated the coiled springs 8. The openings in the buffer 5 for the bolts O diverge outwardly, which permits a sufficient lateral oscillation of the buffer 5 to conform to the arc of the train in passing around a curve. The bolts O are loosely seated in the sill 1, and when the buffers of adjacent cars come forcibly together the springs 8 permit the buffers to yield toward the sill 1 and the bolts O to pass sufficiently inwardly through the latter to relieve the concussion. Supplemental leaf-springs 8' can be interposed diagonally between the sill 1 and buffer 5, outside of the bolts O, if desired.

Heretofore buffers have been placed below the plane of the body of the car, and in violent concussions, the body of the car being

above the point of concussion, there was a tendency for the center of the car to rise and thus wrench or break the car-body. In my improvement I place the point of concussion
 5 in direct line with the lower portion of the car-body, and thereby obviate the difficulty just named; the body of the car receiving the concussion in the direct line thereof.

S S are safety-chains connecting buffer 5
 10 and front sill 1, to provide against said buffer dropping under the car in case of the casual breakage of bolts O.

What I claim as my invention, and desire to secure by Letters Patent of the United
 15 States, is—

1. In a car-coupling, the combination of the draw-bar A, provided with the clutch-head 23 and pivotally seated near its forward end in the car-frame and provided with the
 20 longitudinal horizontal slot B, the frame C, provided with pin-hole D, cross-bars 3 and 4, inserted in slot B and serving as ways for the lateral oscillation of said draw-bar, the lever 11, projected to the side of the car, toggles
 25 12, connecting the inner end of said lever to the rear end of said draw-bar 8, and means, substantially as shown, for securing said lever at the outer end of its arc of movement, for the purpose described.

30 2. In a car-coupling, the combination of the draw-bar A, pivotally seated in a horizontal plane near its forward end and provided with a coupling head or clutch 23, lateral ways 3 and 4, lever 11, suitably fulcrumed to the car-frame and flexibly attached at its inner end
 35 to said draw-bar near the inner end of the latter, and slide 13, provided with engaging lug or depression G, substantially as shown, and for the purpose described.

40 3. In a car-coupling, the combination of an oscillating draw-bar A, provided with the coupling-head 23, lateral ways 3 and 4, lever 11, toggles 12, slide 13, provided with engaging-lug G, and opposing spring 6, adapted to
 45 return said draw-bar to its normal position when said lever is released from said lug, substantially as shown, and for the purpose described.

50 4. In a car-coupling, the combination of the lateral oscillating draw-bar A, pivotally seated near its forward end and provided with the

coupling-head 23, lever 11, couplings 12, hollow brake-rod 16, coupling-rod 15, pivotally seated therein and provided with crank J, and chain 17, attached at one end intermedi- 55
 ately to the lever 11 and adapted at its other end to be wound upon said rod 15, whereby the uncoupling of cars can be effected from the deck thereof, substantially as shown, and for the purpose described. 60

5. The combination of a draw-bar A, provided with the coupling-head 23 and pivotally seated near its forward end in a horizontal plane, the lever 11, toggles 12, vertical rod 15, provided with crank J, a slide 13, provided 65
 with retaining-lug G, and chain 17, whereby said draw-bar is drawn and held out of engagement, substantially as shown, and for the purpose described.

6. In a car-coupling, the combination of a 70
 laterally-oscillating draw-bar A, pivotally seated near its forward end and provided with coupling-head 23, lever 11, provided with arm L, toggles 12, chain 17, vertical rod 15, provided with plate K, fulcrum M, lever 75
 J, and opposing spring 6, whereby said draw-bar can be restored to its working position from the top of the car, substantially as shown, and for the purpose described.

7. In a car-coupling, the combination of a 80
 draw-bar A, provided with a coupling-head 23 and longitudinal pin-slot 10, plate C, provided with pin-hole D, cross-bar 3, spring 7, and pins E and 9, whereby the initiative draft is gradual and subsequent draft from two 85
 points on said draw-bar, substantially as shown, and for the purpose described.

8. In combination with a car-frame A, the buffer 5, seated on bolts O in the same plane with the end sill 1, parallel therewith and a 90
 slight distance therefrom, and interposed springs 8, whereby the violence of the concussion is relieved and the force thereof received in the line of the body of the car, substantially as shown, and for the purpose de- 95
 scribed.

In testimony whereof I affix my signature in presence of two witnesses.

JACOB HAISH.

Witnesses:

CHARLES H. SALISBURY,
 JOHN F. BERGQVIST.