

J. SCOTT.
CAR COUPLING.

Patented June 12, 1888.

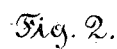
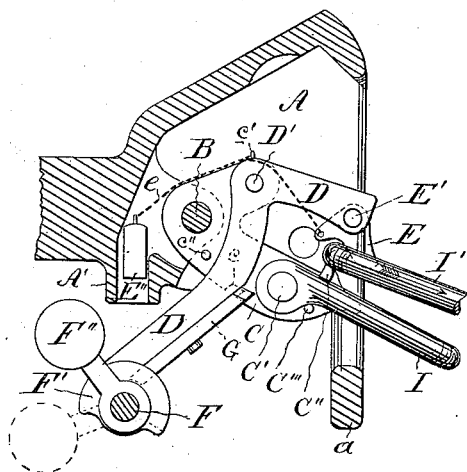
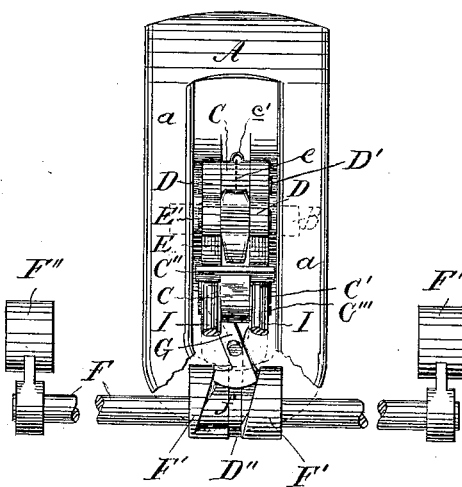


Fig. 3.



Witnesses:
B. Harvey.
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UNITED STATES PATENT OFFICE.

JAMES SCOTT, OF BROCKVILLE, ONTARIO, CANADA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 384,474, dated June 12, 1888.

Application filed December 14, 1885. Serial No. 185,547. (No model.)

To all whom it may concern:

Be it known that I, JAMES SCOTT, of Brockville, in the county of Leeds, in the Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification, reference being had to the accompanying drawings, forming part hereof.

The object of my improvements is the construction of a car-coupler that will couple automatically without liability of uncoupling involuntarily, couple with couplers of ordinary construction having the coupling-link now in general use, that can be regulated for coupling with links at various heights, and be uncoupled without going between the cars. I attain these objects by the construction hereinafter described, and illustrated in the drawings.

Figure 1 is a longitudinal section of the draw-head, showing the coupling-jaw tilted to its highest elevation and in the act of coupling an opposite link. Fig. 2 is a similar section showing the link coupled and the coupling-jaw in its normal position. Fig. 3 is a similar section showing the jaw in its lowest position, unlocked and in the act of uncoupling. Fig. 4 is a front elevation corresponding to Fig. 3, the opposite link being omitted.

A is the hollow draw-head, being open below and having a deep mouth formed by a mouth-rim, *a*. Within and at the rear of the recess of the draw-head is pivoted the coupling mechanism by the pivot B. The coupling mechanism consists of three bell-crank levers, C D E, each of peculiar shape, pivoted together, capable of being locked, and forming a jaw for the reception of the link, one, C, being pivoted to the draw-head and carrying in its forward projecting part and nearly in a line with the pivot B the clevis-shaped coupling-link I, secured by a pin, C'. The other, D, is forked over the former and pivoted thereto above and in front of the pivot B by a pivot, D', and carrying at its downward-extending backward curved tail projecting below the draw-head the cam-shaft F in a hub, D'', and also a locking-finger, G, pivoted to its face and adapted to engage a notch, *c*, in the lower edge of the lever C. The third, E, is pivoted to the upper forward-extending end of the fork D by a pivot, E', nearly in a line with the pivot D'.

The lever or latch E, performing the function of a coupling-pin, has a downward and a rearward extending leg, the flat face of the former being ogee-shaped from the pivot-eye downward and rearward, abutting square on a stop, C'', secured to the forward part of C below the pivot E', the inner side of the leg being curved outward to a point, so as to facilitate the disengagement of the link in uncoupling. To the short rear leg of the latch E a chain or cord, *e*, is attached, passing through an eye or guide, *c'*, on the lever C and carrying a weight, E'', moving in a guide, A', secured to or forming part of the lower and rear part of the draw-head.

The link I is held in its position by the projecting ends of the stop C'' above, and by a pin, C'', inserted in the lever C below. The forward end of the lever sloped out to a point from the stop C'' above and the eye of the link-pin C' below, the point being situated between the sides of the link I. For uncoupling, the lever D is capable, when unlocked, of a limited oscillating movement from the pivot D', upon the lever C, between the rear end of the link I forward and a pin in the lever C rearward. After uncoupling the levers C and D are locked together, when the latter is in its rearward position, abutting on the pin *c'*, and the tip of the latch E touching the upper edge of the lever C by the finger G engaging a notch, *c*, in the lower edge of the lever C in a line with the face of the lever D, to which it is pivoted. The lower end of the finger G is adapted to move in the cam-groove *f*, formed by two similar cams, F, secured one at each side of the hub D'', upon the shaft F, one being reversed, so that the plain face of each is outward. The shaft F is counterpoised by levers and weights F'', hung so as to keep the finger in engagement in the notch *c*. The shaft F being turned by lifting the weights F'' radially, the finger G is disengaged from the notch *c*, and the shaft F being pushed bodily forward, and thereby the lever D swung forward on its pivot, the upper forward part turning upward and the latch E being lifted above and released from the stop C'', then the opposite link, I', which is held by the latch, is now at liberty to be drawn out against the action of the weight E'', which afterward draws the latch back to its normal

position with its tip behind the stop C". The weight F" being now released, the lever D swings back, the shaft F turns, and the finger G engages the notch c, again locking the levers C D E.

It will be seen that the three levers thus locked act as one integral structure, which can be oscillated upon its pivot B at will, keeping the link securely locked within the jaw formed by forward part of C and D and the latch E, while if the jaw be unengaged the link from the opposite car is free to enter by striking the latch E and tilting it up, to be righted again by the weight E" as soon as it has ceased to be in contact with the latch. By pushing the shaft F forward or backward the mouth of the jaw is raised or lowered to receive a link at a higher or lower level, as may be required. The structure thus formed likewise accommodates itself to any required angle if the link I should be engaged at a higher or lower level in an opposite draw-head, sufficient play being given the link I between the stop C" and the pin C". It will also be readily understood that this coupling will work with couplings of ordinary construction having the ordinary link, such as are now in general use.

In the sides of the draw-head suitable perforations are provided in proper positions to insert the pins C' and C" in their places when replacing a link.

I claim as my invention—

1. The combination of the draw-head A, pivot B, lever C, stop C", pins C' C" and c", notch c, link I, lever D, pivot D', hub D", latch E, pivot E', cord c, weight F", guide A', finger G, shaft F, cams F', and weights F", substantially as set forth.

2. In a car-coupler, the combination of the lever C, having removably connected to its lower forward end the coupling-link I, held thereon in a fixed position, and having at

the upper edge of said end the stop C" and in its lower edge the notch c, the lever D, having its upper part forked and pivoted to the lever C forward of its pivot center, and having pivoted to its lower part the swivel-finger G, adapted to enter the notch c, and the latch E, pivoted in the upper forked forward end of the lever D and adapted to engage the stop C", substantially as set forth.

3. In a car-coupler, the combination of the lever C, having at its upper edge on the forward end the stop C", the link I, pivoted to said forward end below said stop C", pivot C', and pin c", adapted to carry said link removably in a fixed position and approximately in a line with the upper edge of the forward end of said lever, substantially as set forth.

4. The combination of the lever C, having stop C", lever D, latch E, pivot E', and weight E", substantially as set forth.

5. The combination of the lever C, lever D, latch E, stop C", and finger G, substantially as set forth.

6. The combination of the draw-head A, pivot B, lever C, and link I, substantially as set forth.

7. The combination of the lever D, shaft F, cams F', weights F", and finger G, substantially as set forth.

8. The combination of the lever C, having stop C", pin c", and notch c, lever D, latch E, finger G, and link I, substantially as set forth.

9. The combination of the levers C and D, latch E, stop C", link I, pin C", and finger G, substantially as set forth.

Signed at Brockville, Ontario, this 28th day of November, 1885.

JAMES SCOTT.

Witnesses:

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ISAAC N. MARSHALL.