

(No Model.)

2 Sheets—Sheet 1.

W. DE CEW.  
CAR COUPLING.

No. 381,914.

Patented May 1, 1888.

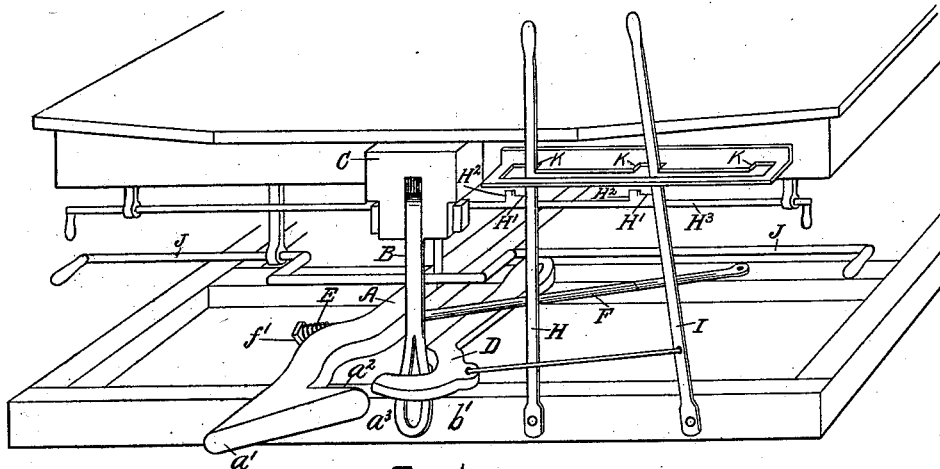


Fig. 1.

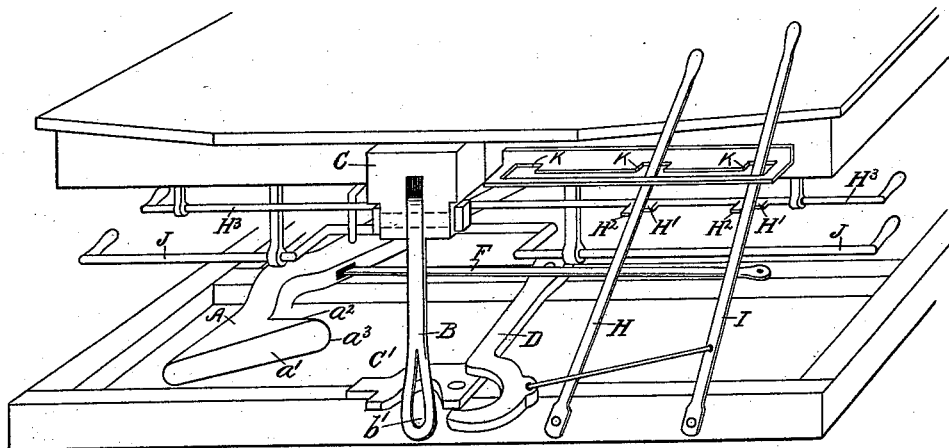


Fig. 2.

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Atty

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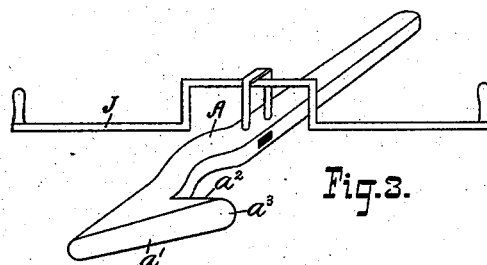


Fig. 3.

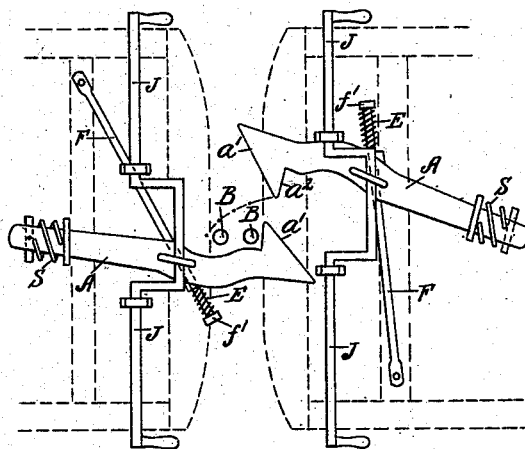


Fig. 4.

Fig. 5.

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# UNITED STATES PATENT OFFICE.

WILLIAM DE CEW, OF AYLMER, ONTARIO, CANADA.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 381,914, dated May 1, 1888.

Application filed October 22, 1887. Serial No. 253,663. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM DE CEW, a subject of the Queen of Great Britain, and a resident of Aylmer, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Car-Couplings, of which the following specification is a full, clear, and exact description.

This invention relates to an automatic coupling for coupling railroad-cars together, and one which is simple, strong, and durable in construction and reliable in operation; and it consists of the improved construction and combination of parts of the same, as will be hereinafter more fully described and claimed, reference being had to the accompanying drawings, wherein—

Figure 1 is a perspective view of one end of a car, showing the position of the different parts of my improved coupler when the cars are coupled together. Fig. 2 is another perspective view of the end of a car, showing the position of the different parts of my improved coupler when the cars are uncoupled. Fig. 3 is a perspective view of the draw-bar and operating-lever. Fig. 4 is a plan view of the draw-bar, showing its position when coupled to the coupling-pin of the opposite car. Fig. 5 shows its position when uncoupled.

A A designate draw-bars supported in and secured by any suitable securing devices to the frame of the car, and each draw-bar is formed with a tapered end,  $a'$ , and hook  $a^2$ , and the latter is curved at  $a^3$ . The tapered end of the draw-bar is for the purpose of enabling the draw-bars to pass one another without striking when coming together, and with a curve,  $a^3$ , on the hook  $a^2$ , to enable them to pass one another without engaging, when the cars are uncoupled, and separating.

The draw-bars A are adjusted on the cars, so that in ordinary circumstances they will not engage with one another when the cars to which they are attached are separating or approaching each other; but this pointed end  $a'$  and curve  $a^3$  are formed on these draw-bars to prevent them or the other parts of the coupling from being injured when striking together, even when accidentally displaced, the hook  $a^2$  on the draw-bar being for the purpose of en-

gaging with the pivotal coupling pin B when coupling the cars together.

B designates a coupling-pin pivotally secured to the buffer or bearing C at one end, and at the other end is held by a coupling-hook, D, pivoted on the frame of the car or truck.

Secured to the truck-frame is a forked bearing or guide, C', (shown particularly in Fig. 2,) which guides the coupling-pin B to and retains it in a vertical position. This forked guide C' also prevents the lower end of the coupling-pin B from moving laterally when the hooked end of the opposite draw-bar is engaged therewith to couple the cars together.

F designates a rod which may be pivoted on the bed-frame of the car or truck, and this rod F extends through a slot in the draw-bar A.

E designates a spring which acts between a shoulder,  $f'$ , on the rod F and the draw-bar A for the purpose of holding the latter in position when coupling as well as after it is coupled.

The bearing C may be and is intended to be used as a buffer, and S is a spring on the end of the draw-bar under the car to ease the strain of the draw-bars on the cars when starting; and the pin B is formed with a loop,  $b'$ , which is adapted to be inserted into the draw-bar of any ordinary car-coupler, so that a car provided with my improved coupler may be readily and easily coupled to any car provided with any ordinary coupler.

H designates a locking-lever, which may be adjusted sufficiently toward the draw-bar A, so that the hooked end  $a^2$  of the latter will not disengage from the coupling-pin B, even if the cars should become displaced, thereby locking the cars securely together; but at the same time this locking-lever does not prevent the operator in the slightest from readily and easily uncoupling the cars when required.

I designates a lever connected with the coupling-hook D for operating the latter to engage with or disengage from the coupling-pin B when wishing to instantly couple or uncouple the cars.

J is another lever connected with the draw-bar A for the purpose of uncoupling and retreating the draw-bar back under the car out

of the way when uncoupled, and this draw-bar is retreated for the purpose of preventing the hooked end  $a^2$  of the latter from engaging with any part of any other adjacent car or coupling when required.

The levers H I J may be pivoted on the frame of the car or any other suitable support, and they may be securely held in the position to which they are adjusted by catches K K, (shown in Figs. 1 and 2,) secured to the frame of the car or other suitable support, or by any other suitable securing devices and operating-screws, or any substantial equivalents may be used in place of these levers H I J.

A draw-bar and its coupling devices are attached, one at each end, to each car, as shown in Figs. 4 and 5, so that when they are coupled together there are two draw-bars engaging with two coupling-pins to form the coupling between the adjacent ends of two cars. This gives a wide connection between the two cars and renders the coupling very strong and secure, and at the same time couples the cars together at two points, which prevents them from oscillating laterally to any appreciable extent, and thereby effecting a great saving in the wear and tear of the cars and rails which are caused by this lateral motion, and which are not overcome where there is only one point of connection, as in the common car-coupler, and if one of the coupling-pins or draw-bars in my improved coupling should accidentally become damaged the cars will still be strongly and securely coupled together by the remaining draw-bar and coupling-pin; but in cases where speedy action of the operator is required to uncouple the cars only one of the draw-bars A should be engaged with the opposite coupling-pin, which is, in fact, really sufficient under all circumstances, it being as strong, when coupled singly, as any ordinary coupling now in use. The disengaged draw-bar may be then used only as a reserve to be engaged when required.

When the draw-bars and couplers are adjusted to the position shown in Figs. 1 and 4, the cars are strongly and securely coupled together, and when the locking-levers H are in the position shown in Fig. 1 the hooked ends  $a^2$  of the draw-bars are securely locked to engage with the coupling-pins B, to completely prevent any possibility of their becoming accidentally uncoupled, even when at an angle to one another or when traveling on a steep incline or grade or when turning the sharpest curves.

When the coupling-hooks D and draw-bars A are adjusted to the position shown in Figs. 2 and 5, the cars are uncoupled and may separate perfectly free; but when adjusting the lever I to disengage the coupling-hook D from the coupling-pin B, the locking-lever H should be adjusted to the position shown in Fig. 2, not for the purpose of uncoupling the cars, but to permit the inclined end  $a'$  of the draw-bar to push the spring E back and pass the coupling-pin B, when the cars are coupling

together, without the assistance of an operator, but to automatically couple themselves; and in order that the levers H and I may be operated simultaneously when uncoupling, I provide a rod, H<sup>3</sup>, with two elevations, H' and H<sup>2</sup>. The elevations H' are adjusted to come opposite the levers H I, so that by turning the rods H<sup>3</sup> about one-fourth of a circle toward the levers H I the elevations H' move said levers H and I out of the catches or notches K K. Then, by drawing the levers outward, the elevations H<sup>2</sup> engage with the levers H and I and operate them simultaneously to unlock the draw-bars and to uncouple the cars.

When wishing to couple two cars together, adjust the coupling-pins B, draw-bars A, and coupling-hooks D to the position shown in Fig. 1 and the locking-lever H to the position shown in Fig. 2. If adjusted to this position, when the cars are uncoupled, the cars then automatically couple by simply approaching each other until the bearings or buffers C engage; and the cars are uncoupled by simply adjusting the coupling-hook D to the position shown in Fig. 2, when the cars may freely separate; and when the coupling-hooks D are adjusted to the position shown in Fig. 2 the cars may come together and part again without coupling, and the operation of coupling and uncoupling being so simple, any well-known devices may be attached to this coupling-hook D to operate it from the side, end, or top of the car, so that this coupling may be adapted to a flat, box, or passenger car; and not only this, but they may be adjusted to couple or uncouple while the cars are stationary or in motion, and by setting or adjusting the coupling-hook D to couple or uncouple by a device at the side of and out from between the cars the operator is not exposed to any danger of life or limbs, or of any nature whatever, when thus setting or adjusting this coupling-hook D. And by adjusting the levers J at either side of the car to the position shown in Figs. 2 and 5, the cars are uncoupled, and the draw-bar A is drawn back under the car out of the way in order to prevent the hooked end  $a^2$  or the end of the draw-bar from interfering with a different draw-bar, or with any part of any adjacent car or coupling.

As shown in Fig. 1, the coupling-pin B is constructed much longer than the size of the draw-bar A in cross-section, so that the draw-bar A may engage with the coupling-pin B at a higher or lower point than that shown in Fig. 1, and this coupling-pin in length may be adapted to the highest possible unloaded car and the lowest possible loaded car, so that cars of unequal height may be as readily, easily, and as instantaneously coupled together as cars of equal height.

The common car-couplings are a large expense annually to the railroads using them, on account of the loss of the common links and pins, which are not attached in any way, but simply rest loosely in the draw-bar. The use of my coupling by railroads results in the

saving of this large expense, because every part of my coupling is attached to the frame of the car, or one part to another.

Having thus described my invention, I claim—

1. The pivotal coupling-pin B, pivotal coupling-hook D, and bearing C, in combination with the draw-bar A, formed with a hooked end,  $a^2$ , rod F, and spring E, for the purpose specified.

2. The locking-lever H and plate formed with catches or notches K, in combination with the pivotal coupling-pin B, pivotal coupling-hook D, and draw-bar A, formed with a hooked end,  $a^2$ , for the purpose specified.

3. A draw-bar, A, moving lengthwise under the frame of the car, in combination with the retreating lever J, for the purpose specified.

4. The pivotal coupling-pin B, pivotal coupling-hook D, bearing C, and forked bearing or guide C', in combination with a draw-bar, A, having a hooked end,  $a^2$ , formed round at  $a^3$ , rod F, and spring E, for the purpose specified.

5. The pivotal coupling-pin B, pivotal coupling-hook D, bearing C, and forked bearing or guide C', in combination with a draw-bar, A, having hooked end  $a^2$ , rod F, spring E, levers H I J, and rod H<sup>3</sup>, formed with elevations H' and H<sup>2</sup>, and a plate formed with catches or notches K, for the purpose specified.

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

WILLIAM DE CEW.

Witnesses:

P. J. EDMUNDS,  
GEORGE POWELL, Jr.,  
JOHN E. CHESTER.