

(No Model.)

J. A. GOWANS & J. MACMILLAN.

CAR COUPLING.

No. 261,444.

Patented July 18, 1882.

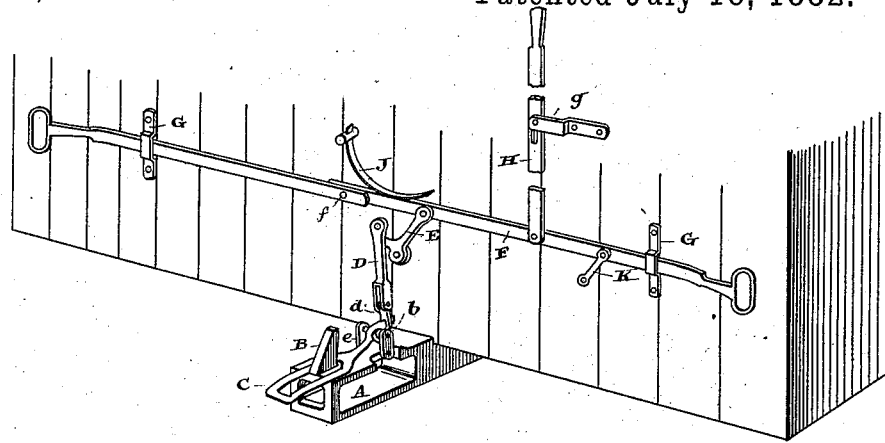


Fig. 1.

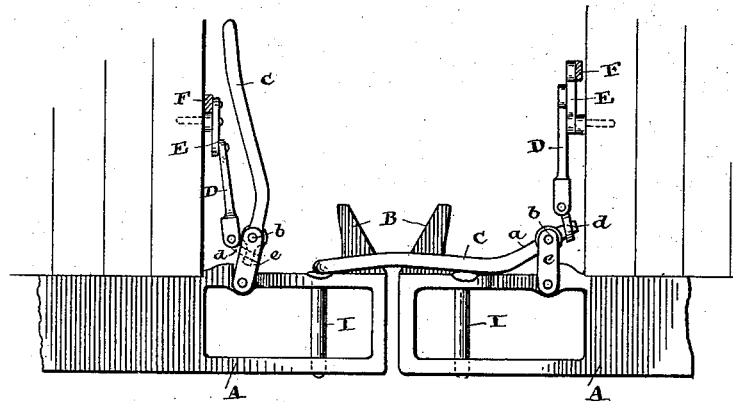


Fig. 2.

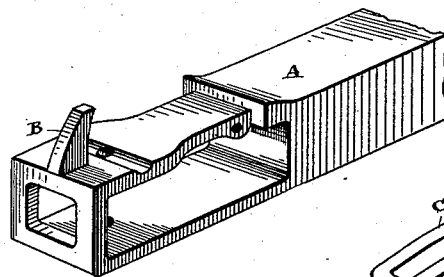


Fig. 3.

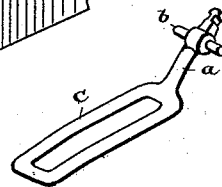


Fig. 4.

Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES A. GOWANS AND JOHN MACMILLAN, OF PARIS, ONTARIO, CANADA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 261,444, dated July 18, 1882.

Application filed April 27, 1882. (No model.)

To all whom it may concern:

Be it known that we, JAMES ADAM GOWANS and JOHN MACMILLAN, both subjects of the Queen of Great Britain, residing at the town of Paris, in the county of Brant, in the Province of Ontario and Dominion of Canada, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

The object of the invention is to provide a car-coupler in which the coupling and uncoupling between the cars may be effected either from the top of the car or from either side; and it consists in forming on top of the ordinary-shaped draw-head a vertical lug near the mouth of the draw-head and pivoting behind the said lug two arms or bars arranged to form a pivotal support for the coupling-link, which is provided with a system of levers arranged to throw the link over the lug of the draw-head upon which it is pivoted, and at the same time over a corresponding lug on the draw-head fixed to the next car.

Figure 1 is a perspective view of an end of a car provided with our improved car-coupling mechanism. Fig. 2 is an elevation showing the two ends of a car coupled together. Fig. 3 is an enlarged detail of our improved draw-head. Fig. 4 is an enlarged detail of our coupling-link.

In the drawings like letters indicate corresponding parts in each figure.

A is a draw-head, shaped substantially in the ordinary way and connected to the car as usual.

B is a projecting lug formed on the top side of the draw-head, near its mouth. The front face of the lug B is beveled from the base toward the point, while the back face of the lug is perfectly vertical, or may be slightly concave.

C is a coupling-link provided with a projecting tail-piece, *a*, having a pivot-pin, *b*, near its end. On the end of the tail-piece *a* a link, *d*, is pivoted so as to work longitudinally. *e* represents two arms parallel to each other, pivoted at one end of the sides of the draw-head A in such a manner that they are permitted to fall forward sufficiently to allow the inside of the link C, when down, to rest against the lug B, but are prevented passing backward beyond a vertical position. This end may be accomplished, as shown in the drawings, by pivot-

ing the arms *e* within a notched slot formed on each edge of the top side of the draw-head and so close to the back end of the slot that the arms are not permitted to fall back, while in front of them the top side of the draw-head is cut away so as to allow of a slight forward movement. The pivoted pin *b* is pivoted upon and forms a connection between the upper ends of the arms *e*.

D is a coupling-rod, pivoted at its lower end upon the link *d*, and connected, as shown, at its upper end to one end of the bell-crank E. This bell-crank is pivoted on the end of the car immediately over or nearly over the draw-head A, and its end not fastened to the coupling-rod D is connected to the horizontal rod F. This rod is supported on the end of the car by bearings G, fixed to the car as represented, and in order to permit of the longitudinal movement of the rod F within its bearings we joint it at *f*, as represented. The link *d* may be dispensed with, if so desired, and the lower end of the coupling-rod D be curved outward and fastened directly to the link C. The horizontal rod F extends, as shown, toward each side of the car, so that it will be within easy reach and may be operated without the necessity of entering between the ends of the cars.

On reference to the drawings it will be seen that owing to the connection of the parts herein enumerated the longitudinal movement of the rod F will cause the link C to assume either a vertical or horizontal position, as may at the time be desired—for instance, when the cars are about to be coupled both links will be held in a vertical position. As the cars come together the rod F on one of the cars is caused to move longitudinally, when the link C, to which it is attached, will be thrown over the projecting lugs B, formed, as described, on the two draw-heads, and in this manner the coupling is accomplished.

In order to hold the link C up when in a vertical position and to hold it down when in a horizontal position, we provide a spring, J, attached to the back end of the car and placed immediately over or nearly over the joint *f*. A curved spring such as is shown in the drawings will, we think, be found most suitable; but of course we do not confine ourselves to the particular description of spring exhibited.

In order to assist the movement of the bell-crank E, we provide a supporting-link, K, pivoted in the end of the car and jointed to the bar F, as shown.

5 Owing to the arrangement of the parts to which the tail-piece *a* is connected, the draft will not be directed against them, but will be wholly borne by the projecting lugs B.

10 In order to permit the operation of our coupling mechanism from the top of the car, we connect at some convenient point on the rod F the vertical rod H, extending to the top of the car and pivoted at *g* on the end of the car. As the working of the bell-crank E will cause the
15 rod F to have a vertical movement while traveling longitudinally, it is necessary that at the point *g* the slotted passage-way should be provided, as shown, for the purpose of permitting the vertical movement of the rod H during the
20 coupling and uncoupling of the car.

Having described the mechanism of our improved car-coupler, we may mention that when a car provided with our mechanism is to be
25 coupled to a car with an ordinary draw-head our mechanism will of course not be used; but instead of it the ordinary coupling-link will be inserted into the draw-head in the usual manner and a draw-pin, I, employed. In order
30 that the draw-pin I may be permitted to remain in position at all times, it will be necessary that it should have a head shaped substantially as shown in the drawings, fitting into a groove cut in the top face of the draw-head.

35 Among the advantages of our improved car-coupling mechanism we may mention that there need be little or no slack motion between the draw-heads, as the link C may be arranged to fit snugly over the lugs.

40 What we claim as our invention is—

1. The link C, having a tail-piece, *a*, arranged at an angle thereto and provided with pivot-journals *b*, combined with the studs B, and the

arms *e*, pivoted upon the draw-heads in such a manner that they may fall forward until the
45 inner end surface of the link-aperture abuts against the adjacent stud B, but are prevented from passing backward beyond a vertical line, and with means, substantially as described, for manipulating said links and arms, as set forth. 50

2. The link C, having tail-piece *a*, with journals *b*, as shown, the pivoted arms *e*, link *d*, rod D, and bell-crank E, combined with the vertical rod H, pivoted to the car-body at *g*,
55 and with connections between said rod H and bell-crank E, whereby the link C may be thrown in or out of service as the rod H is forced in the proper direction laterally, as set forth.

3. In a car-coupling in which the coupling-link is pivotally connected to the draw-head
60 and connected to the horizontal rod F by a rod and bell-crank, as specified, the combination of a vertical rod, H, connected to the rod F and extending to the top of the car, the said rod H
65 being pivoted to the back of the car upon a pin passing through a vertical slot, substantially as and for the purpose specified.

4. In a car-coupler in which the coupling-link is pivotally connected to the draw-head
70 and operated by the horizontal rod F, the combination of a spring, J, arranged to act against the horizontal rod F at or near the joint *f*, for the purpose of holding the coupling-link in a horizontal or vertical position, substantially
75 as and for the purpose specified.

5. A coupling-link, C, provided with a tail-piece pivotally connected to the draw-head, in combination with the rod D, connected at one end directly to the link C and at the other end to the bell-crank E, pivoted upon the end of the
80 car, substantially for the purpose specified.

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Witnesses:

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