C. DERRICK.

CAR-COUPLING.

No. 181,253. Patented Aug. 22, 1876.

Fig. 1.

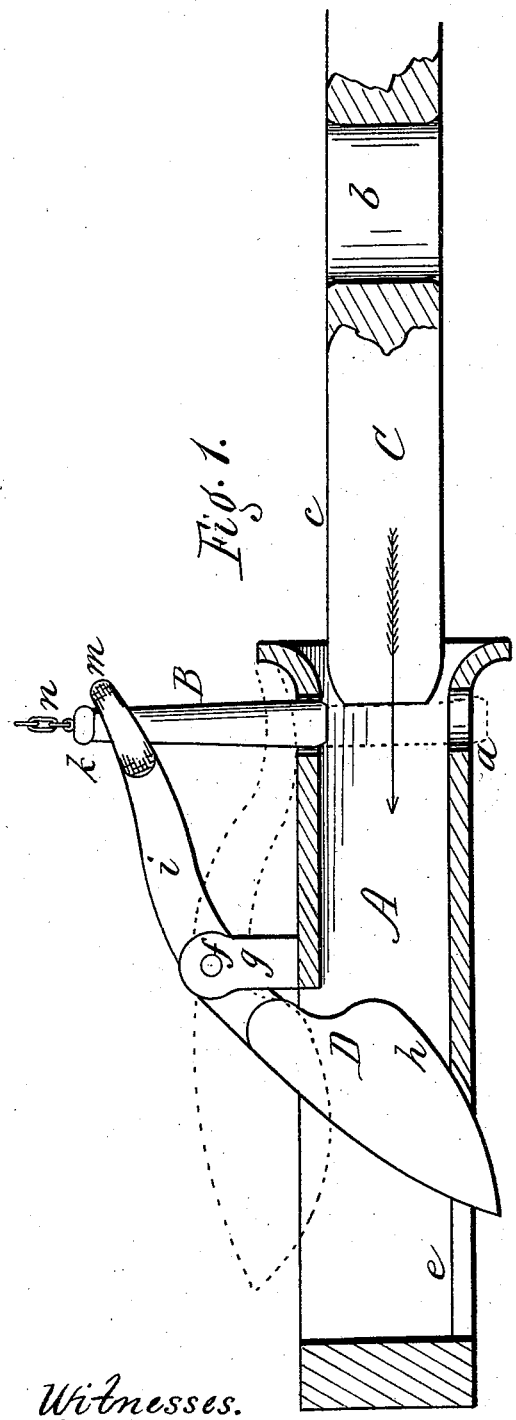
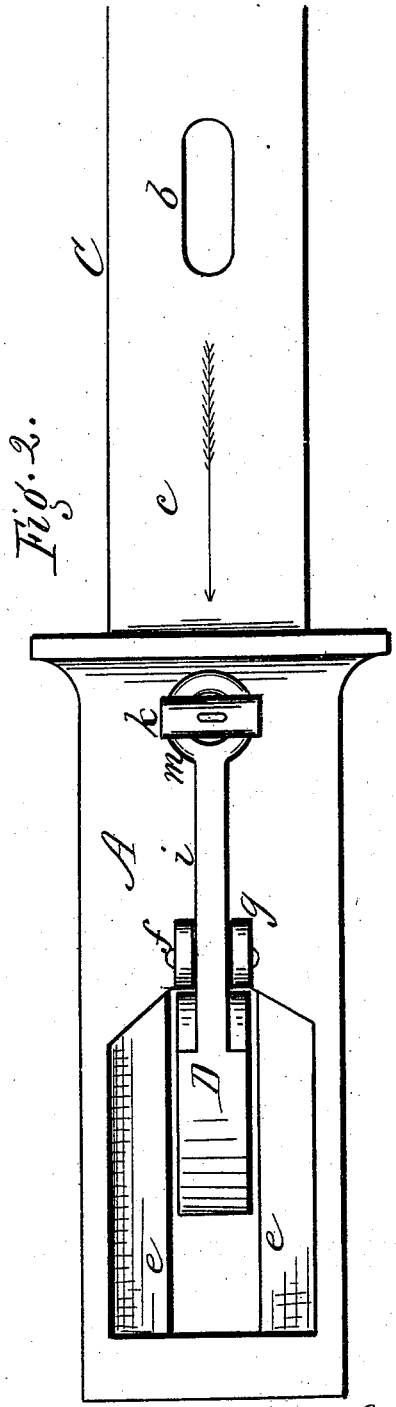


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES DERRICK, OF GENEVA, NEW YORK.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **181,253**, dated August 22, 1876; application filed February 11, 1875.

To all whom it may concern:

Be it known that I, CHARLES DERRICK, of Geneva, in the county of Ontario and State of New York, have invented a certain new and useful Improvement in Car-Couplings; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section. Fig. 2 is a plan.

My improvement relates to that class of car-couplings in which the coupling-pin is held elevated by a counter-weight, that is acted upon by the shackle to release the pin, which then drops through the shackle to complete the coupling.

A is the draw-head, which may be of ordinary form. B is the coupling-pin, which passes through holes *a a* of the draw-head, and engages with the corresponding slot *b* of the shackle C. The shackle is made flat on top, leaving a closed surface, *c*, in front, on which the end of the pin rides when the shackle has entered the mouth of the draw-head, whereby the pin cannot fall till the slot *b* comes in coincidence, even if the hold of the counter-weight is released from it. D is the counter-weight, pivoted at *f* to a bearing, *g*. The rear end is formed with a wedge-shaped head, *h*, constituting the weight proper, which rests across the space or opening of the draw-head, and is retained between guide-flanges *e e*, to keep it in place. The bottom *h* is of inclined form, so that when the end of the shackle strikes it the weight will be easily elevated into the position shown by the dotted lines, Fig. 1. The front end has an arm, *i*, which projects forward to the coupling-pin, and is provided with an eye, *m*, embracing the pin and sliding freely thereon, the latter having a cross-head, *k*, to prevent the pin from drawing out. The pin is raised by a chain, *n*. In its normal position the counter-weight is depressed, and the coupling-pin raised, as shown by the black lines, Fig. 1. In coupling two cars, the shackle passes under the pin and strikes the weight, elevating the same, as shown in the dotted lines, thereby releasing the pin and allowing it to fall through the slot *b* when the same comes in position. This action is accomplished by the employment of the weight and the coupling-pin, without any intermediate parts. When the end of the shackle strikes the weight, the loop or eye *i* slides down upon the coupling-pin, while the latter still remains elevated. This is necessary, since the movement of the shackle must be sufficient to raise the weight before the slot *b* comes in line to receive the pin. No impediment is presented to the raising of the weight, as the eye *i* has a free range of motion on the pin. On the other hand, in uncoupling the cars, the shackle has to be moved back from under the weight to allow the weight to fall, and before the shackle can be thus moved back the coupling-pin must be withdrawn from the slot *b*. The loose eye *i* in such case allows the coupling-pin to be drawn up by the chain *n*, to disengage it, and when the shackle is withdrawn the weight falls, and the eye *i* moves up again to hold the pin elevated.

Thus it will be seen that an important feature in my invention is the loose connection between the weight and the coupling-pin, produced by the eye *i* and cross-head *k*, each allowing the other a full and free range of motion in coupling and uncoupling. By this simple connection I use only the weight and pin, and have no intermediate parts. These parts are cheap, simple, and not liable to disarrangement. In all other devices, so far as I am aware, additional parts, such as levers or links, have to be employed between the weight and pin. In this invention, also, the connecting parts are above and outside of the draw-head, so that the device can be easily applied to the draw-heads now in use. It is necessary that the counter-weight should be situated in the rear of the coupling-pin, as shown. If located in advance the same arrangement could not be used, but a more complicated construction would be required. The inclined bottom *h* of the weight insures an easy raising of the same by the shackle and the guide-flanges *e e* keep the weight in a true vertical plane, so that there can be no lateral twist that would make the coupling-pin bind in the eye.

I do not claim, broadly, a pivoted counter-weight and pin; but

I claim—

The combination, with the counter-weight D, provided with the eye *m*, of a pin, B, resting loosely in the said eye, and retained by a cross-head, *k*, the whole constructed and arranged so that in coupling the eye can slide down upon the pin, to admit the shackle, and in uncoupling the pin can be raised independently of the counter-weight, as and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CHARLES DERRICK.

Witnesses:
JOHN S. BROCKIE,
JAMES A. GARRISON.