A. WILLSON.

CAR-COUPLING.

No. 177,366. Patented May 16, 1876.

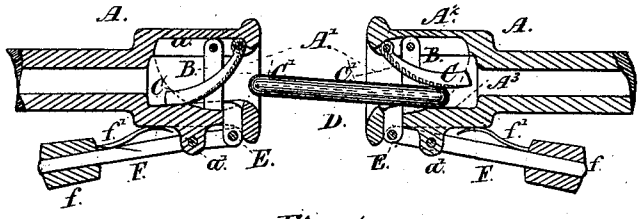

Fig. 1.

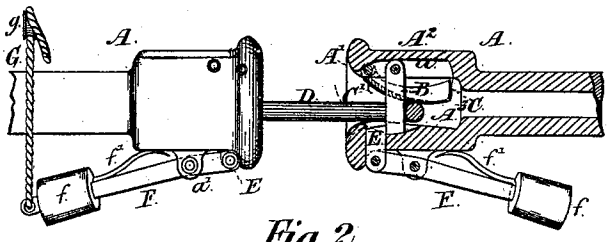

Fig. 2

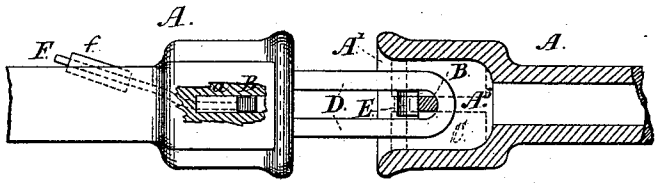

Fig. 3.

Witnesses;

Geo. A. Aird.

Hugh Aird.

Inventor

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per

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Attys.

UNITED STATES PATENT OFFICE.

ALFRED WILLSON, OF BELLE EWART, CANADA, ASSIGNOR OF ONE-HALF HIS RIGHT TO P. E. DRAKE AND E. M. LAW, OF SAME PLACE.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **177,366**, dated May 16, 1876; application filed February 1, 1875.

To all whom it may concern:

Be it known that I, ALFRED WILLSON, of the village of Belle Ewart, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification:

My invention relates more particularly to improvements in self-acting link car-couplings; and it consists of a cast-iron draw-head with solid top, having the usual bell-mouth and link-chamber. At a suitable distance back from the face of the draw-head a pin is pivoted in a groove running longitudinally along the roof of the link-chamber, and terminating at a point a short distance from the face of the bell-mouth. The lower end of the pivoted pin bears, when at rest, against the inner face of a movable jaw working in a slot cut in the under portions of the draw-head. This jaw is operated by a suitable lever attachment, and is kept in position by a spring or weight on the operating lever. Within the link-chamber two counter-balance weights are hinged, one end of which bears on the rear end of the link, keeping it depressed on the inclined bottom of the link-chamber, and holding the outer end in an elevated position, and yet allowing the link all the freedom of motion that is necessary to prevent breakage when the cars are in motion.

The object of my invention is to provide an automatic car-coupling that will couple with certainty under the ever-varying requirements of railway work, and at the same time be capable of being uncoupled without backing up the cars to remove the pressure from the pin.

In the accompanying drawings, Figure 1 is a longitudinal section; Fig. 2, a half-sectional view; Fig. 3, a plan of a pair of draw-heads constructed according to my invention.

A A are the cast-iron draw-heads attached in the ordinary manner to the cars, and having the usual bell-mouth and link-chamber, and a solid top, A^2, (to prevent ice, dirt, &c., getting into the link-chamber,) and having the bottom A^3 of the link-chamber inclined so that the outer point of the link is held at or about a level with the center of the bell-mouth by the weight. B is a pin pivoted in a groove, *a*, sunk in the roof of the link-chamber, capable of swinging any required distance back from or forward of the perpendicular. *c c* are counter-balance weights, one on each side of the pin, curved to a suitable shape, and hinged to the roof of the link-chamber near the bell-mouth. The other ends, being weighted and resting on the link D, hold it in a horizontal or elevated position always, and yet at the same time permit the link to work up and down, or laterally, with the motion of the cars. E is the lower movable jaw, working in a slot cut in the bottom of the draw-head, against the inner face of which the lower end of the pin B bears. To E is attached a lever, F, pivoted on the lugs *a'* of the draw-head, and weighted with a weight, *f*, (or its equivalent the spring *f'*,) to keep the movable jaw in the position shown in drawings—that is, to form the ledge or shoulder against which the pin B presses when the load is drawn. The lever F may be placed in the same line as the draw-head, or it may be arranged at such an angle that the long end will project beyond the side for the better convenience of operating it. G is a rope attached to the end of the lever and passed over suitably-arranged pulleys, for the purpose of uncoupling without it being necessary for the operator to go between the coupled cars. The rope may be carried to either or both sides of a car, or to the top also, when desired.

The operation of my coupler is as follows: For the purpose of illustration we will presume that one draw-head is without a link, the opposite draw-head having a link attached. The link, being held in a horizontal or elevated position, enters the opposite draw-head with a certainty that can be relied on, and, striking the pivoted pin, knocks and holds it up until the end of the link clears the radius of the pivoted pin, which then falls down within the link, locking the draw-heads together.

To uncouple, the movable jaw is depressed by the aid of the mechanism shown below the end of the pin, which then, prevented by no obstacle, swings forward and allows the link to escape.

The advantages gained by my invention are, first, my coupler will couple with all existing link-couplings; second, no operator need go between cars to couple or uncouple; third, the cars can be uncoupled when the full draft of the train is on the draw-heads; fourth, the link is always held elevated.

I claim as my invention—

The draw-head A, having the inclined link-bearing face A^3, in combination with the hinged independent counter-balance weights C and C, depending from the top of the interior of the draw-head, one at either side of the pendent pin B, and adapted to rest upon the link D, substantially as and for the purpose specified.

ALFRED WILLSON.

Witnesses:

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JNO. STEVENSON.