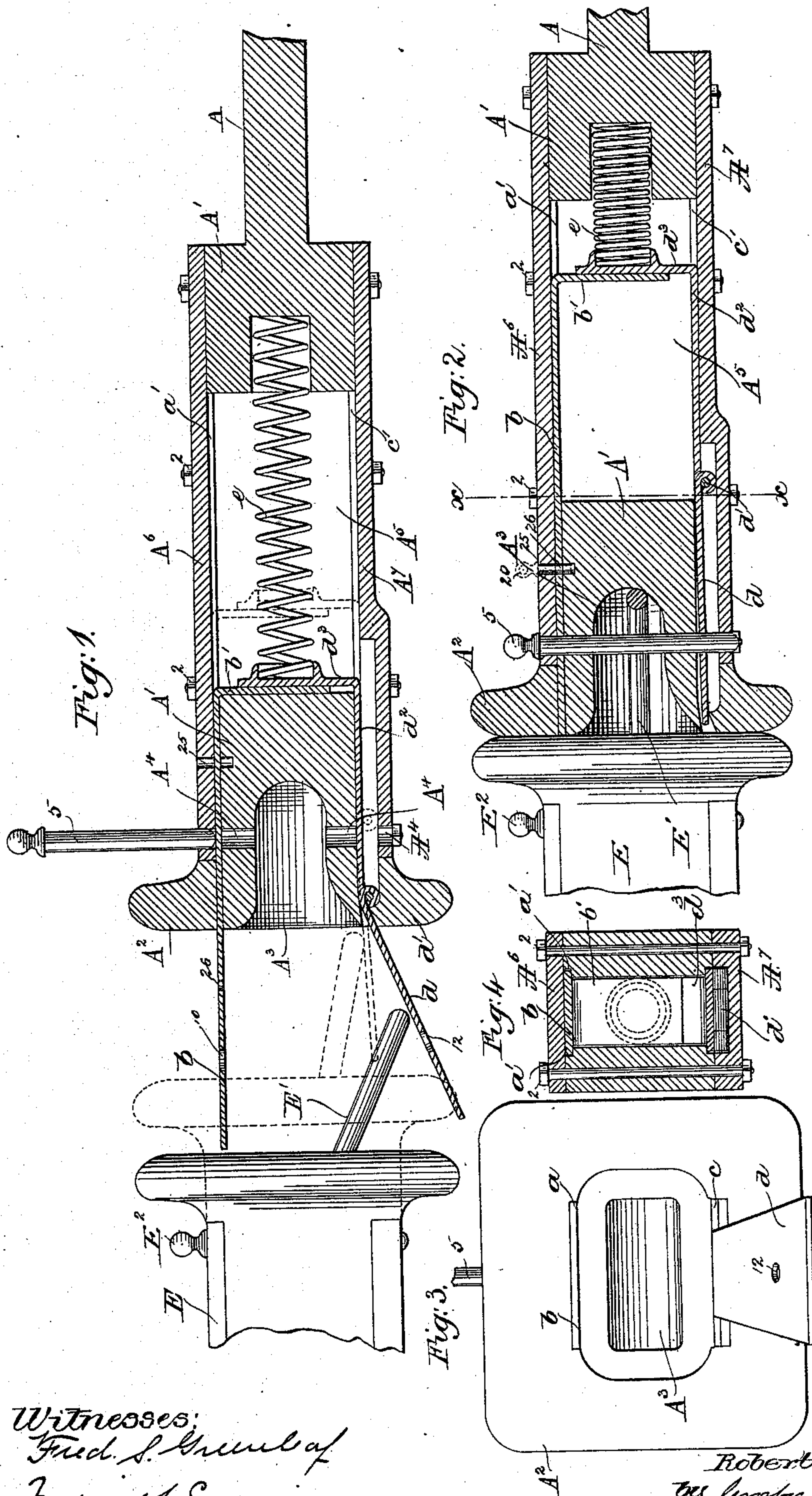


CAR COUPLING.

No. 412,519.

Patented Oct. 8, 1889.



Witnesses:
Fred. S. Green of
Frederick L. Emery -

Inventor.
Robert Matheson,
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UNITED STATES PATENT OFFICE.

ROBERT MATHESON, OF OXFORD, COUNTY OF CUMBERLAND, NOVA SCOTIA, CANADA, ASSIGNOR OF ONE-HALF TO RUFUS WOOD, ALLEN HAIGH, AND JOHN ROBB, ALL OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 412,519, dated October 8, 1889.

Application filed July 23, 1889. Serial No. 318,365. (No model.)

To all whom it may concern:

Be it known that I, ROBERT MATHESON, of Oxford, county of Cumberland, Nova Scotia, Canada, have invented an Improvement in Car-Couplings, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to construct a car-coupling which, while retaining all of the advantages of a loose or link-and-pin coupling, shall combine therewith the important principle of automatic coupling, not alone with couplings of its own type, but with couplings of any other type as well.

My invention consists in the combination, with the usual draw-bar and draw-head, of a link-lifting device operated by the abutting contact of the two draw-heads in the act of coupling.

My invention also consists in certain details of construction to be hereinafter pointed out.

Figure 1 is a vertical longitudinal section of a coupling embodying my invention, together with part of another like coupling, the couplings being separated; Fig. 2, a similar view showing the same coupled together; Fig. 3, a face view of one of my couplings, the coupling-pin being elevated; and Fig. 4, a cross-section taken on the dotted line xx , Fig. 2, looking toward the right.

Referring to the drawings, A represents the usual draw-bar, having secured to it or formed as a part of it the draw-head A', having at its front end the usual flange A² and the recess A³ to receive the coupling-link. A vertical passage A⁴, to receive the coupling-pin 5, extends down through the draw-head, intersecting the link-receiving recess A³. The flange A² of the draw-head has a slot a , (see Fig. 3,) located above the recess A³, for the reception of the sliding buffer or pin-supporter b , the said buffer being herein shown as a plate of steel or other equivalent material fitted to slide in suitable guideways a' , formed in the upper side of the draw-head, the said buffer having a portion b' turned down, preferably at right angles, as shown, into the slot or

chamber A⁵, formed in the draw-head, a plate 50 or cam A⁶ being bolted or otherwise secured to the upper side of the draw-head by bolts 2, to retain the buffer in the said guideways. The flange A², just below the mouth of the link-receiving recess A³, has a second slot c , 55 for the reception of the link-lifter d , herein shown as a plate of steel or other equivalent material, hinged at its rear end, as at d' , to a sliding plate d^2 , adapted to slide in suitable guideways c' , formed in the under side of the 60 draw-head, the said plate d' at its rear end being bent, preferably at right angles, to form a lip d^3 , which lies behind the downturned end b' of the buffer b . A spiral spring e is interposed between the upturned end d^3 of 65 the plate d^2 and the head A', the normal tendency of the said spring being to force the said buffer and link-lifter into their outermost positions, as shown in section in Fig. 1.

A plate A⁷, bolted to the under side of the 70 draw-head, holds the sliding plate d^2 and the link-lifter d in place. The slot c at its lower side is cut away to allow the link-lifter d to drop below a horizontal position, as shown in section, Fig. 1, when the same is in its outer- 75 most position; but when the said link-lifter is drawn into the draw-head through the slot c it is gradually raised into horizontal position, as shown by dotted lines, Fig. 1.

The buffer b and link-lifter d are provided 80 with holes 10 12, (see Fig. 1,) which, when the said buffer and link-lifter are in their innermost positions, register with the vertical passage A⁴; but when the said buffer and link-lifter are in their outermost positions, as in 85 Fig. 1, the passage A⁴ is cut off, the pin 5 then resting upon and being supported by the buffer b .

The operation of my improved car-coupling is as follows, assuming the various 90 parts to be in the positions shown in Fig. 1, the buffer and link-lifter being in their outermost positions, with the coupling-pin resting upon the buffer. Let E represent the draw-head of the coupling of another 95 car, and E' a coupling-link carried thereby and held loosely by a pin E². As the draw-heads approach each other, the coupling-link

E' will arrive in position above the link-lifter before the draw-head E meets the buffer *b*, which done the said draw-head E' will push the said buffer before it into the draw-head A', and, as shown, as the said buffer *b* is pushed in its downturned end *b'* engages the upturned end *d³* of the plate *d²* and draws the same and its attached link-lifter *d* into the draw-head. (See Fig. 2.) As the said link-lifter is drawn into the said draw-head through the slot *c*, it is gradually raised to a horizontal position, lifting the coupling-link E' sufficiently, as shown by dotted lines, Fig. 1, so as to readily enter the recess A³ of the draw-head A'. As the draw-heads come together, the buffer *b* is forced into the head A' and the link E' enters the recess A³ until the faces of the two draw-heads come together, as shown in Fig. 2, when the buffer and link-lifter having been forced completely in the holes 10 and 12 therein register with the vertical passage A⁴, allowing the pin 5 to drop down into the passage A⁴, passing through the link E' in its descent and completing the operation of coupling.

The spiral spring *e* is compressed, as shown in Fig. 2, during the coupling operation, so that when the pin 5 is withdrawn and the cars are separated the said spring will immediately force the link-lifter and buffer out again into position shown by the section lines, Fig. 1.

My improved coupling will couple automatically with any other usual link-and-pin coupling, as well as with one like itself, so long as the other coupling is adapted to push the buffer *b* into the head A' before it.

Should the coupling-link E' be carried by the draw-head A' instead of by the draw-head E, the buffer and link-lifter will then be retained in their innermost positions by the pin 5, and thus out of the way, so that they cannot interfere in any way with the coupling of cars in usual manner.

It will also be noticed that when it is desired to couple two cars both of which are equipped with my improved coupling, the buffer and link-lifter on the draw-head which carries the link will be in the draw-head, where they can in no wise interfere with the buffer and link-lifter on the other draw-head.

When necessary, the buffer may be retained within the draw-head, if the coupling-pin 5 is withdrawn, by dropping a small pin 20 (see dotted lines, Fig. 2) into a hole 25 in the upper side of the draw-head, the pin passing through a hole 26 in the buffer, as shown.

I do not desire to limit my invention to the particular construction shown, as the same may be varied somewhat and still come within the scope of this invention.

I claim—

1. In a car-coupling, the draw-bar and its draw-head, combined with a movable buffer and a pivoted sliding link-lifter operated thereby, substantially as described.

2. The draw-bar and its draw-head, combined with a movable buffer *b* and a movable plate *d²*, having a hinged link-lifter *d*, substantially as described.

3. The draw-bar and its draw-head A', having a link-receiving recess A³, a flange A², and openings *a* and *c* above and below the said recess A³, and the movable buffer *b* in the said opening *a*, combined with the link-lifter in the said opening *c* below the said recess A³, the lower side of the opening being shaped to allow the said link-lifter to drop down at its free end below a horizontal plane when the same is in its outermost position, and a spring to keep the buffer and link-lifter normally in their outermost positions, substantially as described.

4. The draw-bar and its draw-head A', having a link-receiving recess A³, and a vertical passage intercepting the said recess for a coupling-pin, combined with a movable buffer located above the said recess and a link-lifter located below the said recess, the said buffer being provided with a hole which registers with the said vertical passage when the said buffer is in its innermost position only, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT MATHESON.

Witnesses:

M. L. RODGER,
C. H. OSELEY.