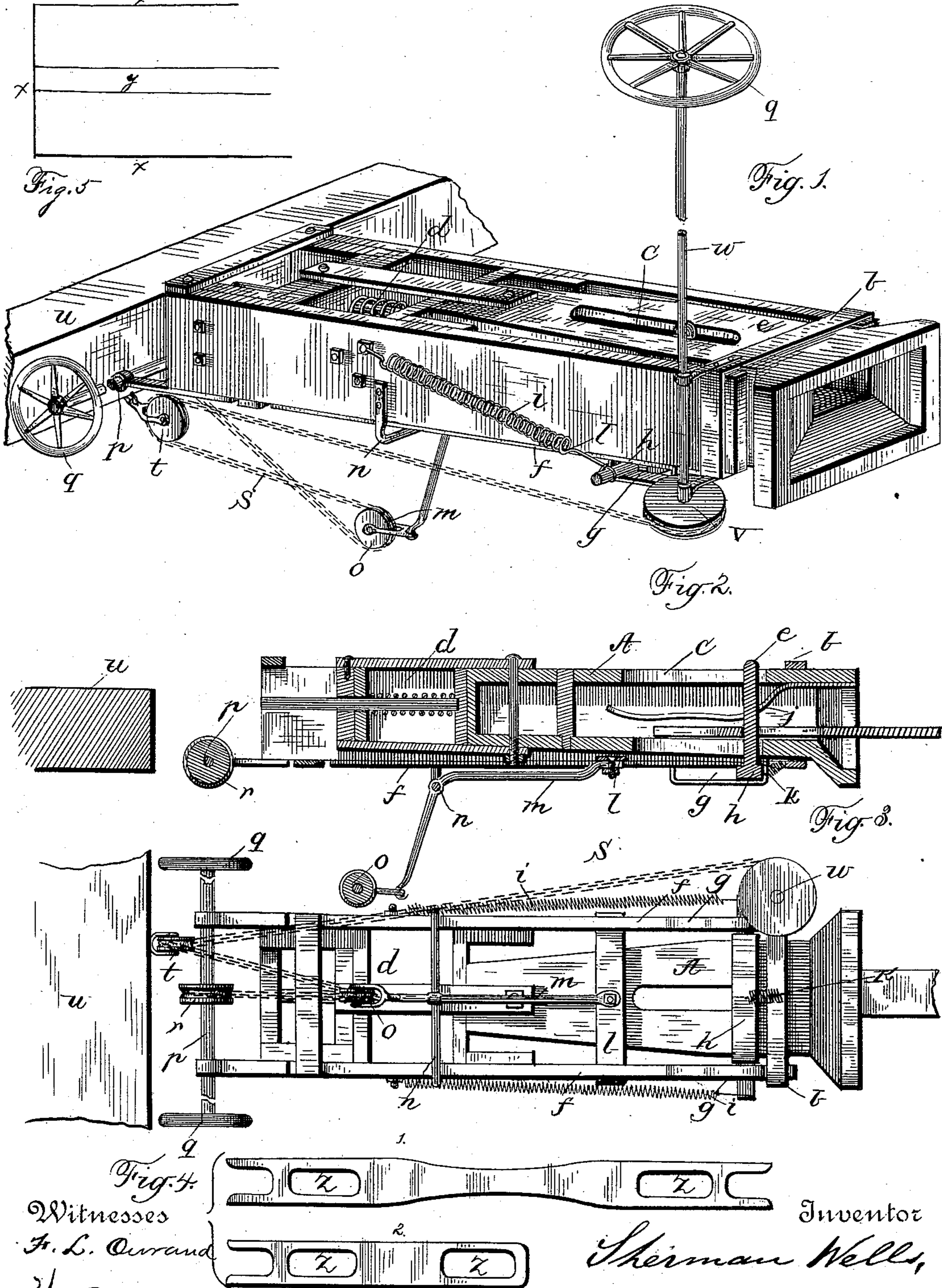


(No Model.)

S. WELLS.
CAR COUPLING.

No. 359,481.

Patented Mar. 15, 1887.



Witnesses
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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 359,481, dated March 15, 1887.

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To all whom it may concern:

Be it known that I, SHERMAN WELLS, a citizen of the United States, residing at Manawa, in the county of Waupaca and State of Wisconsin, have invented certain new and useful Improvements in Car-Couplings, of which the following is a description.

Heretofore coupling has been effected by the operator's passing between the cars, entering the link with the hand, and inserting the pin by the same means, at imminent risk of life and limb, as is attested by countless accidents, so generally known that they need not be here recounted. Uncoupling, being accomplished in a similar manner, has been attended with like risk and loss.

The object of my invention is to obviate this hazard and loss by dispensing with the operator in coupling through the agency of a self-acting coupling so perfected that the cars cannot come together without effecting a coupling, and by the use of such devices as will enable the operator to uncouple the cars from the top or from either side without ever passing between the cars. By this means the cost of operating the roads will be lessened by the amount paid for injury incurred as aforesaid, by the time and labor saved in more expeditiously making up trains, and by the wages now paid employes who could be dispensed with. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved car-coupling. Fig. 2 is a sectional view of the same. Fig. 3 is a bottom view. Fig. 4 are detail views of the link used, and Fig. 5 shows the stop which prevents the lowering of the pin-rest far enough to allow the pin to fall below a horizontal position, and presents a spring to the slot or pin-hole for the pin to strike if it falls to the horizontal position.

Similar letters of reference indicate corresponding parts in all of the figures.

The form of the bumper A at the mouth is flat on top, the sides slant outward, and the bottom downward. They then return straight to form a solid and strong surface for the bumper to strike. The neck of the bumper A extends backward between draft-timbers to where it is fastened to the part d, containing draft-springs.

The pin-hole c in the bumper will be within sufficient distance of the band-iron b at the end of draft-timbers to allow the necessary forward motion of the bumper. This is necessary, as the coupling-pin e, entering from the under side, must move backward and forward as the bumper jerks and slides back into place.

The coupling-pin e is held in position by springs f f, one lying along the under side of each of the draft-timbers extending to band b. The ends are bent downward and backward on themselves, thus forming a box or slot, g, which shall be of sufficient length to allow the necessary movement of the coupling-pin e backward and forward. The springs f f must be of sufficient strength to resist the downward jar of moving cars.

From the coupling-pin bar h, which rests in the box or slot g at the end of the springs f f, run two coiled-wire springs i i—one on each side—fastened to pin-rests h h, thence backward to the bolt which holds the draft-box in place. The coupling-pin e must be securely fastened to the bar h, extending through the boxes or slots g g at the ends of the springs f f.

Fastened to the inside of the top of the bumper A extends a spring, j j, slanting backward, thence downward, then backward nearly to the end of bumper. An opening must be made in the spring j j, to allow the coupling-pin e to tip when struck by the coupling-link. The purpose of this spring is to preserve a horizontal position of the link, and to press it down and insure its falling around the pin. The pin e, entering from the bottom through c and assuming an upright position in the bumper A, when struck by a coupling-link, tips backward far enough to allow the link, by raising the spring j j inside of the bumper A, to slide over the top of coupling-pin e and fall on the other side. When the link is drawn forward, it raises the pin e, thus forming a self-coupling.

To perform the uncoupling, fasten a bar of iron, l, to the top side of the springs f f far enough back of the coupling to allow the tipping of the pin backward. From the center of this bar l fasten a lever, m, in the form of an elbow, and extend it backward a sufficient distance to allow the pin e to drop even with the bottom of the inside of the bumper A

when the elbow *m* is drawn backward. Fasten the elbow *m* to a shaft, *n*, to be fastened to the draft-timber. The lever *m* is bent straight downward from the shaft *n*, and will be of such length as will not interfere with any other part of the car. At the lower end of the elbow *m* fasten a pulley, *o*. Just back of first wheels of car run a shaft, *p*, the whole width of car, coming out on each side of the car, and fasten it to the outside sills or main timbers of the car. At each end of shaft *h* fasten a wheel, *q*, having four arms. At the center of shaft *p* attach a pulley, *r*, over which or from which run a chain, *s s s*, through the pulley *o* in the end of elbow *m*, backward to another pulley, *t*, fastened to axle-timber *u* of car-frame, thence forward and fasten it to another pulley, *v*, on shaft *w w*, which comes downward from top of car near bumper A, without interfering with the brake-wheel. Shaft *w* will have a wheel, *q*, similar to that on sides of car. The movement of these wheels *q q*, acting through the chain *s s s* upon the pulleys *r v*, over *o* and *t* upon the lever *m*, bears down the springs *f f*, and withdraws the bolt or coupling-pin *e*, thus effecting the uncoupling.

Attach a band of iron, *x*, Fig. 5, to draft-timbers under the coupling-pin to prevent the bearing down of the springs *f f* too far, and from the center of the band *x* extend a spring, *y*, upward to the entrance of pin-hole *e*, to prevent the coupling-pin from falling out when bent backward.

The form of link, Fig. 4, 1 will be a flat bar of iron, rounded at the ends, so as to pass on each side of the coupling-pin *e*. A hole, *z*, is to be made in link, slanting toward the center to give play to the car. In links 2, Fig. 4, to use with couplings now in use, one end is to be of same form as those now used, the other end like those for this coupling. These links will give more play than those now in use; but the bumpers will not require the same room between the cars; consequently the cars will not draw so far apart. It should be added that it is my purpose to make the springs *f f* curved, if necessary, to give sufficient strength and firmness.

Attached to the lower end of the coupling-pin *e* at pin-rest is a short coiled spring, *K*, and fastened to band *b*, serving to maintain the erect position of coupling-pin *e*.

Having described my invention, I claim—

1. In a car-coupler, the combination of a bumper having a slot in its top and bottom, two springs secured to the bottom of the draw-head, having a loop at their forward ends, a

coupling-pin bar secured in said loops, and a pin secured to said bar.

2. In a car-coupler, the combination of a bumper having a slot in its top and bottom, springs secured to the bottom, a coupling-pin bar journaled in the ends of said spring, a coiled spring secured to each end of said bar and to the sides of the draw-head, a coiled spring secured to the middle of the bar and to the forward end of the draw-head, and the coupling-pin.

3. In a car-coupler, the combination of a bumper having a slot in its top, a pin pivotally secured to the bottom, and two springs secured to the inner forward side of the bumper and extending rearwardly and downwardly upon each side of said pin.

4. In a car-coupler, the combination of a draw-head having two springs secured to its under side, a bar having an upwardly-projecting pin secured to its middle journaled in the forward end of said spring, an elbow-lever pivotally secured to the under side of the draw-head, a cross-bar secured to one end of said lever engaging with said springs, and means, substantially as described, for operating said lever.

5. In a car-coupler, the combination of a draw-head having two springs upon its bottom, a pin-bar having a pin secured to its middle journaled in the ends of said springs, a shaft secured to the bottom of said draw-head, an elbow-lever pivoted upon said shaft, having a cross-bar at one end engaging with said springs and a pulley at the other, a pulley secured to the axle itself of the car-frame, a shaft having a pulley at its middle and hand-wheels at each end, a vertical shaft having a hand-wheel at one end and a pulley at the other, and a chain for operating said coupler.

6. In a car-coupler, the combination of a bumper having a slot in its top and bottom, a pin, and a band secured to the bottom of said bumper, said band having a spring formed thereon.

7. In a car-coupler, the combination of a draw-head consisting of side pieces secured to a box at their rear ends and to a band at their forward ends, draft-springs within said box, a bumper pivotally secured to said box, having the top of its forward end flat and its sides and bottom flaring outwardly, and a pin.

SHERMAN WELLS.

In presence of—

S. T. RITCHIE,
O. E. WELLS.