(No Model.) 2 Sheets—Sheet 1.

W. E. WILLIAMS.

CAR COUPLING.

No. 347,409. Patented Aug. 17, 1886.

Fig. 1.

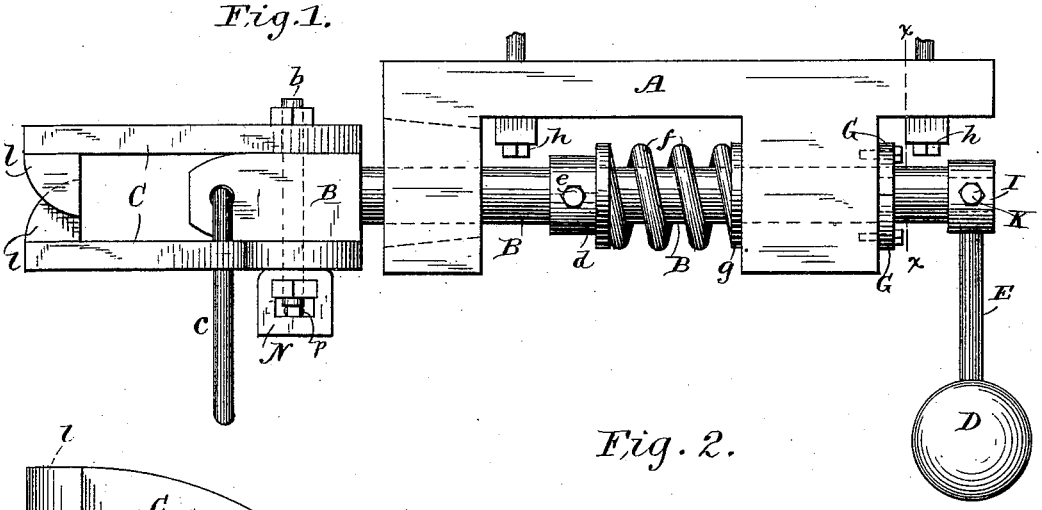


Fig. 2.

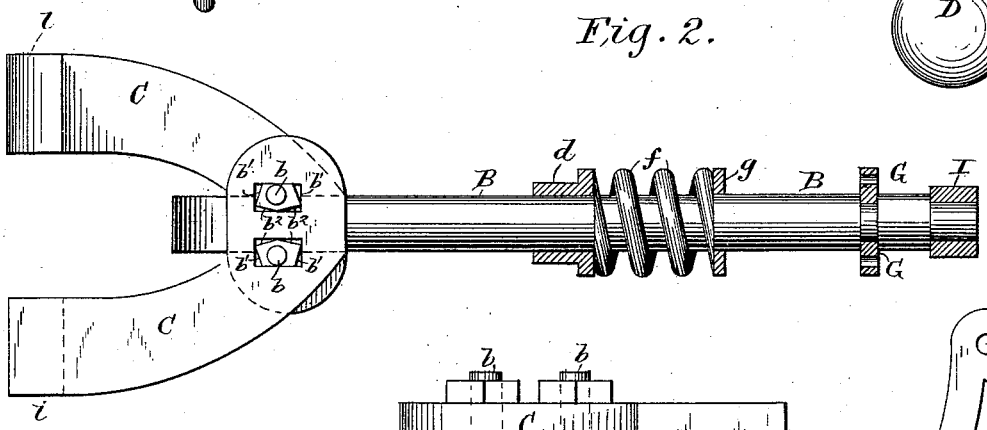
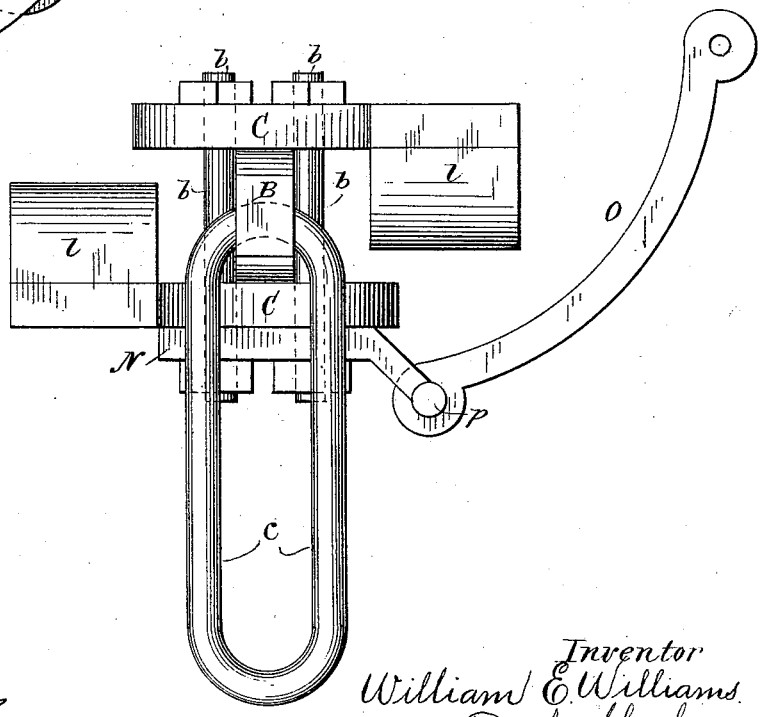


Fig. 3.



Witnesses
Jos. A. Lehmaier
R. F. Campbell.

Inventor
William E. Williams.
By his Attorney Frank Sheehy

(No Model.) 2 Sheets—Sheet 2.

W. E. WILLIAMS.

CAR COUPLING.

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Fig. 5.

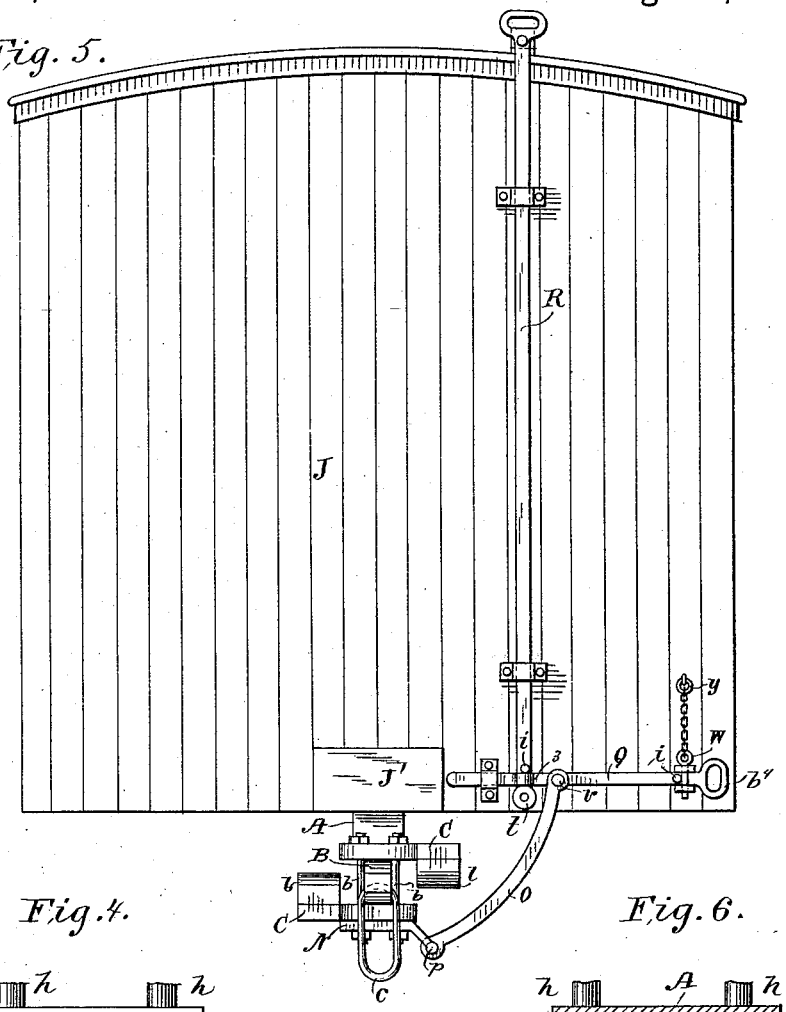


Fig. 4.

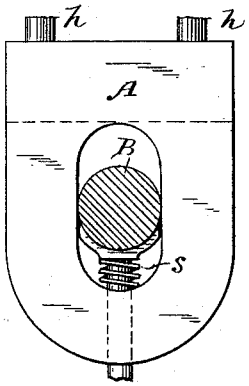
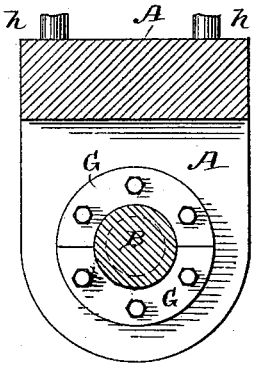


Fig. 6.



Witnesses
Jos. S. Latimer
R. F. Campbell

Inventor
William E Williams.
By his Attorney
Frank Sheehy.

UNITED STATES PATENT OFFICE.

WILLIAM E. WILLIAMS, OF BOONVILLE, MISSOURI.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 347,409, dated August 17, 1886.

Application filed June 25, 1886. Serial No. 206,213. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. WILLIAMS, a citizen of the United States, residing at Boonville, in the county of Cooper and State of Missouri, have invented certain new and useful Improvements in Car-Couplings; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to novel and valuable improvements in railroad-car couplers of the class which are applicable to freight-cars and coaches, and which self-couple when cars come together, and self-uncouple in the event of the derailment of a locomotive or car, which improvements will be fully understood from the following description, when taken in connection with the annexed drawings, in which—

Figure 1 is a side elevation of the improved coupling and its supporting-shoe. Fig. 2 is a top view of the coupling without the shoe. Fig. 3 is a front end view of Fig. 2. Fig. 4 is a front end view of the shoe, its spring-seat, and two of the bolts which secure it to the car-bed. Fig. 5 is an end view of a freight-car box, showing the lever and hand-rod attachments. Fig. 6 is a rear end view of the shoe with circle-plates attached and a cross-section through the draw-bar in line *x x*, Fig. 1.

Referring to the annexed drawings by letters, A designates a substantial cast-iron shoe, which is adapted to be secured by vertical bolts *h* to a car-bed. The front depending part of this shoe has a vertically oblong passage through it, as shown in Fig. 4, to allow free vertical play to a draw-bar, B. The rear depending portion of the shoe has a circular forwardly-flaring passage through it, (indicated by dotted lines in Fig. 1.)

The main body of the draw-bar B is cylindrical, but its forward portion is rectangular in cross-section, and preferably slightly tapered, as shown in Fig. 1. To this latter portion I attach two parallel arms, C C, the rear portions of which are curved backward and inward, as shown in Fig. 2, and the front ends are provided with beveled noses or latches *l l*, adapted for engagement with similar devices on the draw-bars of other cars. The rear ends of the arms C C are attached to the rectangular portion of the draw-bar B by means of bolts *b b*, which fit in slots in the sides thereof and are beveled at $b' b' b^2 b^2$, forming a polygon, as shown in Fig. 2, thereby allowing lateral motion to the said arms C C from side to side.

Near the front end of the draw-bar B a well-known link, *c*, is attached to it, which is designed for coupling with cars not provided with my improved device.

N designates a wrought-iron plate attached under the arms C C by the bolts *b b*, which plate is connected by a pivot, *p*, to the inner end of a curved link, O, hereinafter again referred to.

D designates a weight, which is secured to the rear end of the vibrating bar B by a rod, E, and band I, and a bolt, K, at an angle of about forty-five degrees when the car is locked.

At *d* is a cast-iron band, secured rigidly to the draw-bar B by a bolt, *e*, against which band abuts the front end of a spiral spring, *f*, and *g* designates a washer, against which spring *f* also abuts.

G G designate half-circles of cast-iron, which are applied in an annular groove in the draw-bar and rigidly bolted to the rear side of the rear depending portion of the shoe A. (Shown in Figs. 1 and 6.) These plates G G resist the pull on the draw-bar, and they are readily applied to it after it is inserted into the shoe.

By again referring to Fig. 4 it will be seen that the bar B at the front end of the cast-iron shoe A rests upon a spring, *s*, inserted in a recess, and held in place by a pin inserted from the inside of the casting through a hole in its bottom.

Q designates an iron rod, which is attached to the end of the car J by brackets, so that this bar is allowed endwise play toward and from the bumper-block J'. (Shown in Fig. 5.) This rod Q is bent at *z*, to permit a vertical rod, R, to pass behind it and to rest on a wheel, *t*, which is attached to this rod. The upper end of the curved link O is connected by a pivot, *v*, to the sliding rod Q. The outer end of this rod Q is provided with a looped handle, b^4, which is in close relation to the side of the car, and is bent outward, so that it can be conveniently grasped by a person without his

having to go between cars. W is a vertical pin, which is attached to a ring, *y*, fixed to the car-body by a chain, and is designed to lock the car when coupled. The upper end of the rod R is also provided with a looped handle and a locking-pin, and at *i i* are studs fixed to the rods R Q, one of which pins holds the rod Q to the wheel *t*, and the other stud abuts against the pin W when the coupling is locked, as shown in Fig. 5.

From the above description it will be seen that I have a self-coupler, so that when cars come together the beveled surfaces of the latches *l* slide one over the other, (two similar couplings of course being used,) and when entirely over the weight D turns the draw-bar back, so that the arms C C are horizontal and firmly locked together, after which, by locking the rods Q R, as described, the cars cannot be uncoupled while they remain on the track. If, however, a car should leave the track, it becomes uncoupled.

To uncouple cars, a person at the side removes the pin W and pulls on the rod Q. If a person is on top of a car, he removes the locking-pin of rod R and pulls up this rod.

Having described my invention, I claim—

1. A car-coupler consisting of a draw-bar which is allowed a limited oscillation about its axis and provided with a weight applied on a radial arm, in combination with coupling-latches on the ends of curved arms and polygonal bolts connecting these arms to the head of the draw-bar, substantially as described.

2. The combination of the shoe A, constructed as described, an oscillating loaded draw-bar applied in the flaring passages through the shoe and provided with latching-arms, polygonal bolts, and a plate, N, the coiled spring *f*, confined between collars on said bar, and the half-circle collars secured to the shoe and embracing the draw-bar, substantially as described.

3. The combination, with a rocking draw-bar and coupling-hooks applied thereto, of the plate N, the link O, pivoted thereto, the pull-rods adapted to be operated independently for uncoupling, and the locking devices applied to these pull-rods, substantially as described.

4. The combination, with the oscillating draw-bar, the horizontal pull-rod connected to this bar by a link and plate, the stud and locking-pin applied to the said pull-rod, the vertical pull-rod, its wheel and stud, between which said horizontal pull-rod passes, and a locking device applied to the vertical pull-rod, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM E. WILLIAMS.

Witnesses:

AUGUST DENGDERKY,

JOSEPH WILLIAMS.