

(No Model.)

E. HICKMAN.
Car Coupling.

No. 232,126.

Patented Sept. 14, 1880.

Fig. 1.

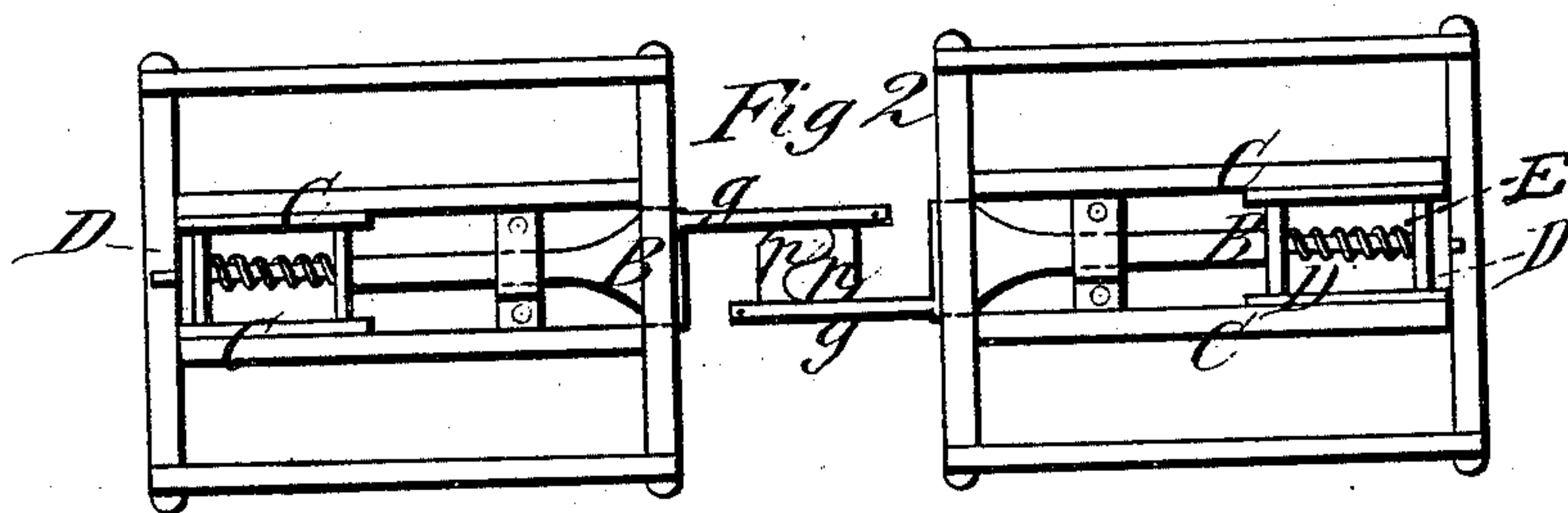
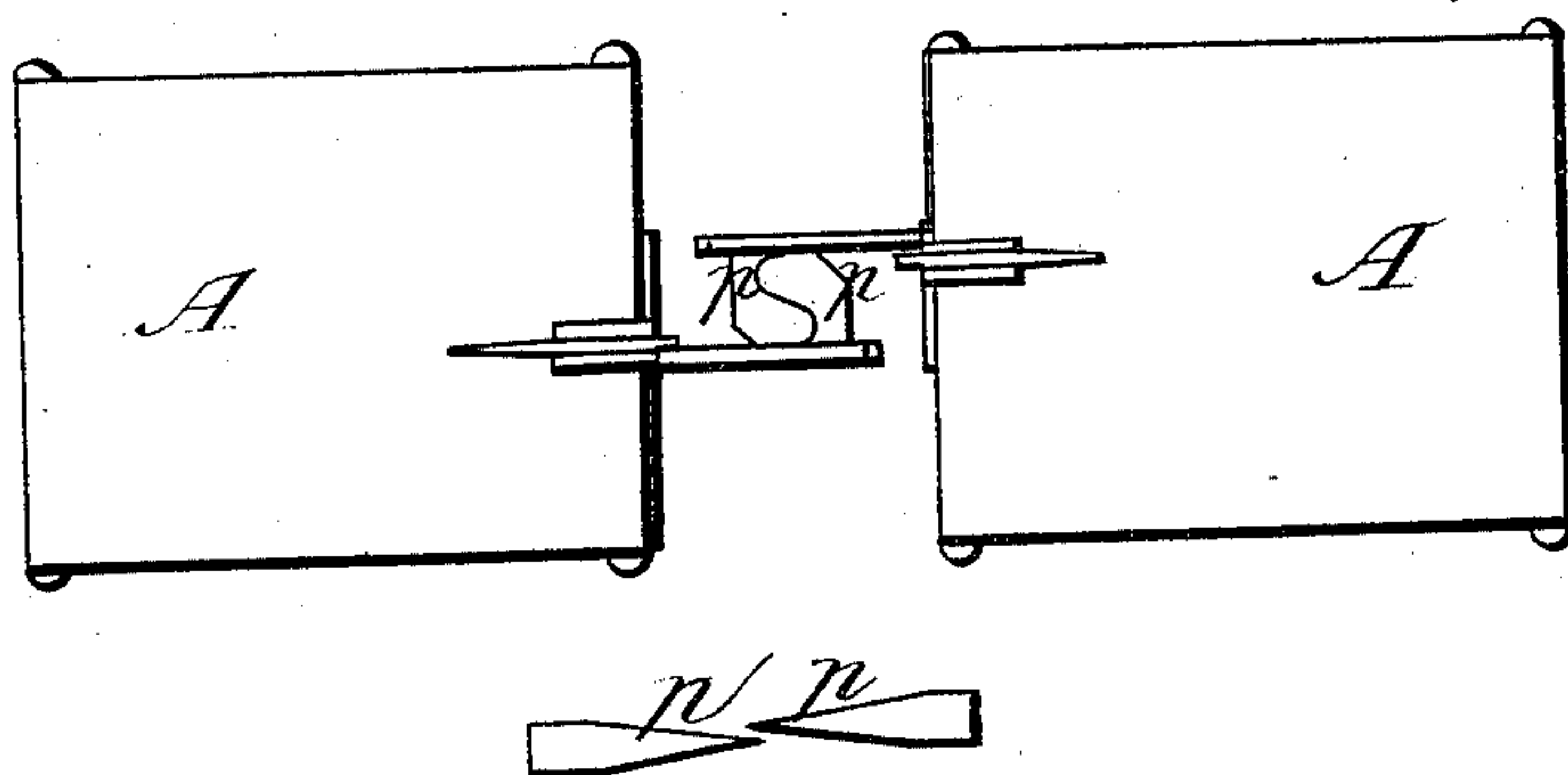


Fig. 3.

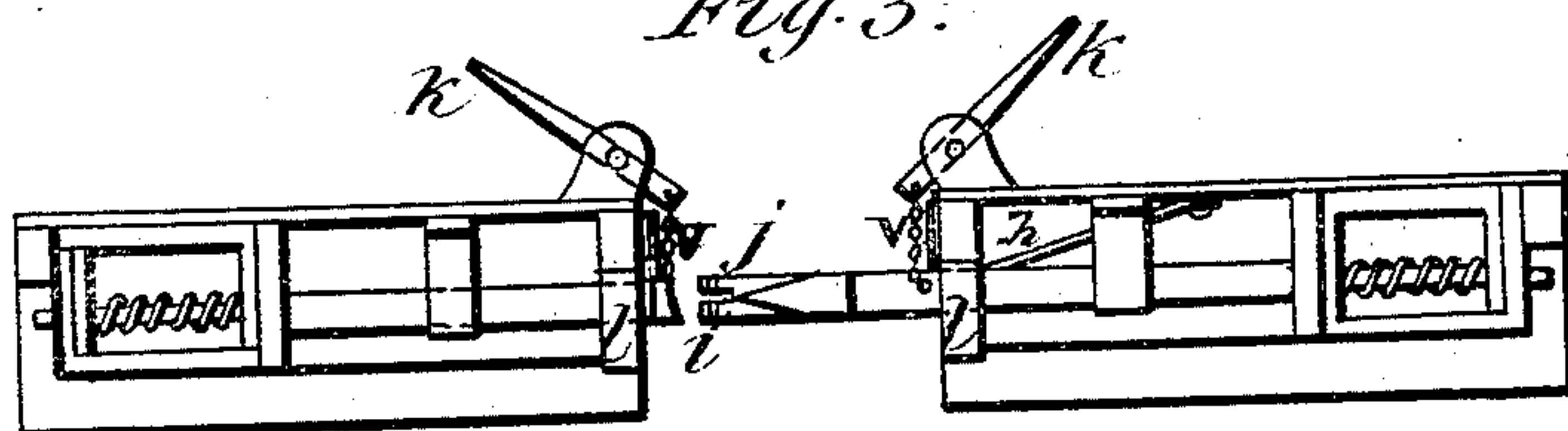
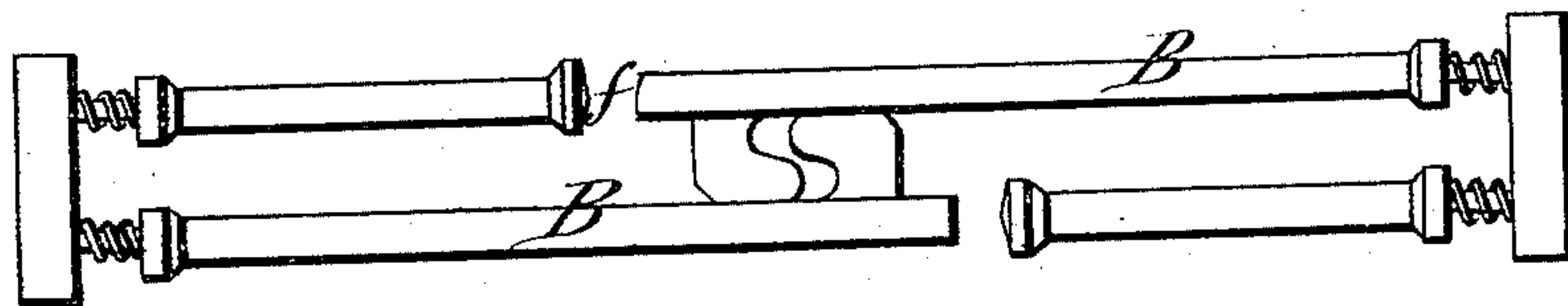


Fig. 4.



Attest:

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UNITED STATES PATENT OFFICE.

ELIJAH HICKMAN, OF RED BLUFF, CALIFORNIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 232,126, dated September 14, 1880.

Application filed March 25, 1880. (No model.)

To all whom it may concern:

Be it known that I, ELIJAH HICKMAN, of Red Bluff, in the county of Tehama, State of California, have invented an Improved Car-Coupling; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to certain drawings accompanying this specification and forming a part thereof.

My invention has reference to a new and improved self-acting coupling device for connecting railway-cars together; and it consists of the construction and arrangement of parts hereinafter specified.

Referring to the accompanying drawings, Figure 1 is a plan showing the interlocking hooks. Fig. 2 shows a bottom view of the trucks with interlocking hooks. Fig. 3 shows a side section. Fig. 4 shows a plan with bumper detached.

A A represent the ends of two railway-cars. I construct both ends of every car alike, so that no matter how the cars are shifted or changed, whenever two of them meet on one track, the coupling devices will be in the proper relation to connect together. I will therefore describe the construction and application of my coupler to one end of one car only.

B is the draw-bar, which I secure between parallel timbers C C underneath the car-floor, in the ordinary way, so that the coupling end will project from the end of the car. The opposite or rear end of the draw-bar is reduced in size, and this reduced portion passes through two sliding blocks, D D, which move between the timbers C C. A spiral or other spring, E, surrounds this reduced portion between the sliding blocks in the usual way, so that a strain upon the draw-bar in either direction will move the blocks toward each other and condense the spring between them.

It will be noticed that I widen the draw-bar on both sides equally toward the end of the car, and make a shoulder, *f*, directly below the end of the car, which shoulder extends across the widened portion on one side, and also across the end of the draw-bar, leaving the projecting portion *g* extending from the widened portion of the opposite side instead of in a direct line with the main length of the bar. This shoulder forms the bumper, as will be hereinafter described.

The opening *l*, through which the widened portion of the draw-bar passes, is large enough to allow the outer end of the bar to lift several inches, if necessary. A strong spring, *h*, has one end secured to the bottom of the car, while its opposite end presses the draw-bar down, so that it ordinarily rests on the bottom of the opening. An upward pressure, however, exerted upon the outer end of the bar will depress or condense this spring and lift the end of the draw-bar upward.

The extension *g* projects, as above stated, from one side of the widened portion of the draw-bar, and it has a strong hook, *p*, projecting from its outer end on the same side that the shoulder *f* is on. This hook points backward, and its back extends out at a right angle to the extension *g*, so as to provide a strong body of metal. Both the upper and lower sides of the hook are made inclining or curved, so that from the point of the hook which is thickest the sides gradually approach each other like a wedge until they meet along the back or outer portion of the hook. Now, when two cars come together on the same track, the extensions *g* will be on opposite sides and the backs of the hooks *p* will meet. As these hooks are wedge-shaped their points will pass each other. The upward pressure on the upper wedge will condense the spring *h* and lift the outer end of its draw-bar while it rides up over the under hook and drops behind it. If the cars have sufficient momentum when they come together the projecting ends of the extensions *g* will strike the shoulders *f* simultaneously and the momentum will be arrested. When the pull comes upon the train the two hooks will interlock and hold the cars together.

The throat and outer face of each hook I make rounding, so that ample freedom is allowed for the points of the hooks when the cars are passing around a curve.

It will be noticed that the concussion produced by the extension-bars coming in contact with the shoulders *f* is in line with the main draw-bar, so that no damage can be occasioned by it. The points of the hooks can be made as wide as necessary to accommodate the varying height of cars.

I also make a slot, *i*, in the outer end of each extension *g*, and make a hole, *j*, vertically through the parts above and below the slot, so

that, if necessary, an ordinary link and pin may be used for connecting them together or for connecting an old-style coupling to one of my improved couplings.

5 For uncoupling the cars I simply lift one of the draw-bars until its hook will pass over the other hook. To do this I mount a treadle or foot-lever, *k*, on top of the car and connect the draw-bar with one end of it by a chain or cord,
10 *v*, for permitting a person who is standing on top of the car to lift the draw-bar and disconnect the couplings.

The bumpers might be arranged independent of the draw-bars, as represented at Fig. 4, in which case greater buffing elasticity could
15 be obtained by employing independent buffer-springs to resist the concussion. The buffer-beam can also be made short, so that the end of the extension *g* must enter the opening under the platform before it strikes the bumper-head. This will prevent telescoping in case of
20 collision.

This coupling is extremely simple, strong, and effective; and while it can be used with
25 equal advantage on either passenger or freight cars, it has a special value for the latter purpose on account of its peculiar adaptation to that class of cars. Another advantage which this coupling possesses is, that in case one of
30 the cars of a train should jump or be thrown

off the track the couplings will disconnect themselves automatically, so that the displaced car will not disturb the remainder.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, 35 is—

1. An improved self-acting car-coupling, consisting of the draw-bars *B*, with their shoulders *f*, extensions *g*, and wedge-shaped hooks *p*, said draw-bars having their rear ends attached
40 to sliding blocks *D*, while their opposite or outer ends pass through enlarged openings *l*, against the bottoms of which they are pressed by springs *h*, so that the hooks *p* will override each other and couple by lifting verti- 45 cally, substantially as specified.

2. In a car-coupling, the backward-pointing hooks *p*, made wedge-shaped toward their outer or back edges, and attached to draw-bars which are capable of lifting vertically, so
50 that the hooks will override each other in coupling and uncoupling, substantially as above specified.

In witness whereof I have hereunto set my hand and seal.

ELIJAH HICKMAN. [L. S.]

Witnesses:

J. V. DE VRY,

WILL B. SCHWARTZ.