JAMES B. HARPER.

Improvement in Car-Couplings.

No. 115,845. Patented June 13, 1871.

Fig. 1

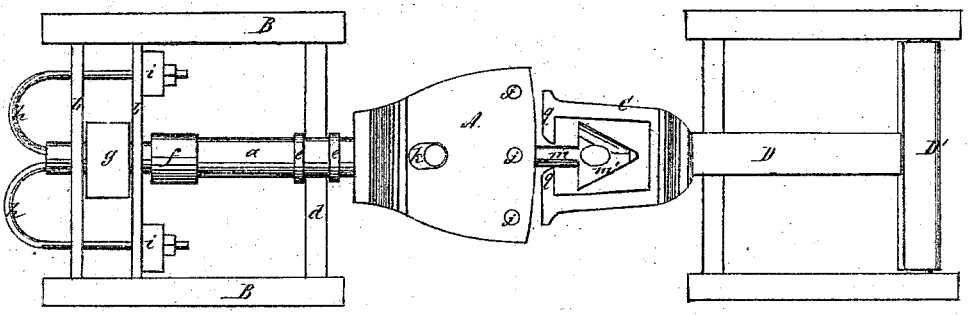
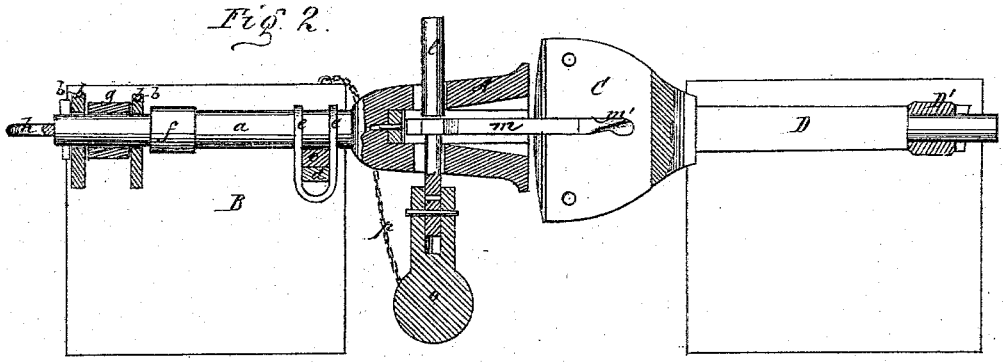


Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES B. HARPER, OF ST. JOHN, MISSOURI.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. 115,845, dated June 13, 1871.

To all whom it may concern:

Be it known that I, JAMES B. HARPER, of St. John, in the county of Putnam and State of Missouri, have invented a new and Improved Car-Coupling; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a top view, and Fig. 2 is a sectional elevation.

This invention relates to an automatic car-coupling, in which the draw-heads are pivoted to the cars so as to be horizontally rotary, and in which the link is pivoted at one end to one of the draw-heads, and has, at its other end, a pointed head with spirally-cut sides, which head, when two cars are coupled, enters the other draw-head, the lips of which, acting on the spiral sides of the head, turn the same vertically until it enters the cavity of the draw-head, after which the said head turns horizontally so far as to present its rear side to the inner sides of the lips of the draw-head, and thus be held within the latter. The invention consists in the construction and arrangement of certain parts, as hereinafter described and as specifically stated in the claim.

Referring to the drawing, A is the male draw-head, made of any desired size, and mounted on the front end of a shaft, *a*, which passes through horizontal parallel iron plates *b b*, placed at a suitable interval apart crosswise of the frame B B, which is secured to the end of a car in any suitable manner. Near its front end the shaft *a* is supported on a box, *c*, which rests on a cross-bar, *d*. A U-shaped link, *e*, fastens the shaft to the box *c* in such a way as to allow the shaft all necessary vertical play.

The shaft *a* is formed with an enlargement, *f*, in front of the forward plate *b*, the purpose of which enlargement is to prevent the shaft from being driven backward too far through the plates. A rubber block, *g*, placed between the plates *b*, surrounds the shaft *a*, and said plates have sufficient play in the frame B, in the line of the shaft, to enable the spring *g* to prevent severe shocks. The shaft *a* is supported upon a pin formed by the welding together of the ends of two wires or rods, *h h*, which enter a socket in the rear extremity of said shaft. From their junction at this point wires or rods *h* are bent entirely around, and extend forward through the plates *b*, one at each side of the shaft. On said wires, in front of the forward plate *b*, are placed rubber springs *i i*, which are held in place by nuts, which springs also assist in preventing shocks, and on keeping the shaft free, so that it may rotate sufficiently on its front and rear supports. The draw-head A is provided with holes *j*, running entirely through it, to receive the ordinary pin when common couplings are used. A larger orifice, *k*, in rear of the holes *j*, also runs clear through the draw-head, and in this orifice is received the large pin *l*, which pivots the link *m* within the draw-head. The link *m* may work up and down, and may be swung aside on this pivot so as to put it out of the way if the common coupling is used. The pin *l* is formed with an enlarged head above the link, and it extends below the draw-head far enough to enable a weight, *o*, that is provided with a socket, which goes on outside of the pin, to be secured to the latter by a key passing through both. This weight serves to keep the draw-head and link in their proper horizontal position, and as a lever to enable the draw-head and link to be rotated for the purpose of uncoupling, by means of chains *p*, fastened at one end to the weight, and at the other ends to points in the sides, tops, or platforms of the cars. The weight also assists a spring that is placed in the draw-head behind the latch in keeping the latter in a horizontal position. The other or female draw-head, C, is constructed, externally, the same as the draw-head A. Internally it differs from its fellow in having lips *q* at its front end, said lips presenting beveled forward surfaces, and in having a larger cavity. It also differs in position from the other draw-head, being intended, except when the common coupling is used, to stand turned up sidewise, with its lips and cavity running vertically. To sustain it in this position it is secured to the front end of a bar, D, that is square in cross-section, said bar having a cylindrical pin secured to its rear end, which pin passes loosely through a cross-bar, D′, or through cross-plates like *b b* on shaft *a*, with rubber block like *g*, and enables the bar and draw-head to rotate freely.

The link *m* has a spear-head, *m'*, with spiral sides, which, when they come in contact, during the operation of coupling, with the beveled lips *q*, turn the link and draw-head up sidewise, so that the head *m'* can pass between the lips *q*.

As soon as the head *m'* enters the cavity of the draw-head C the weight *o* causes the link and draw-head A to turn down into their former horizontal position, which being done, the cars are coupled. To uncouple, reverse the process. The weight *o* is made adjustable on the bar which passes through the head of the link by means of a pin and transverse perforations, as clearly shown in Fig. 2. Thus the weight may be adjusted to properly balance the draw-head and link. When one car gets off the track, the head *m'* slips out of the draw-head C, and thus prevents the other car from sharing in the disaster. The draw-heads A and C can be inserted with ease and without expense for adjustment in the place of ordinary draw-heads. The head *m'* is provided with a hole to receive an ordinary pin whenever that becomes necessary. A block for each end of each car, with two holes for carrying pins, and mortise for carrying a link, is provided and fastened to every car.

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

1. The stationary draw-head C, provided with lips *q* at the front, which are separated throughout their length so as to leave a clear cavity through the draw-head, in combination with the link *m m'*, weight *o*, bar and rotary draw-head A.

2. The rods *h h*, forming at their junction a pivot-bearing for the shaft *a* of the draw-head, and passing through the plates *b b* and elastic blocks *i i*, as shown and described.

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