

GEORGE F. STONE.

Improvement in Car-Couplings.

No. 126,344.

Patented April 30, 1872.

Fig. 1.

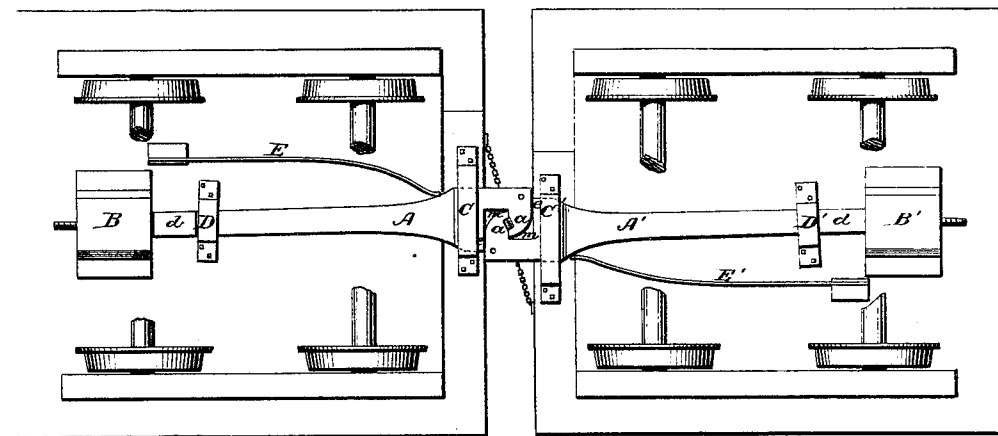


Fig. 2.

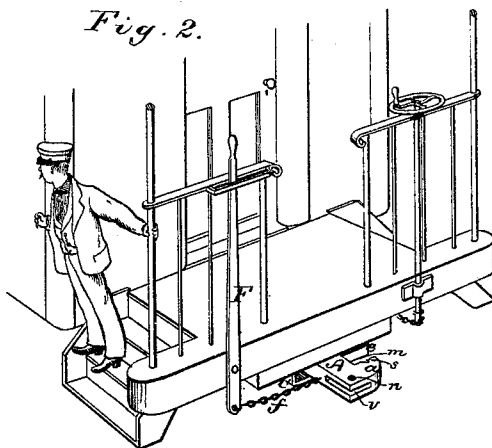


Fig. 3.

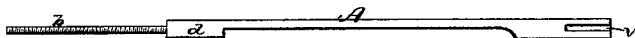
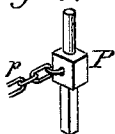


Fig. 4.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. 126,344, dated April 30, 1872; antedated April 17, 1872.

To all whom it may concern:

Be it known that I, GEORGE F. STONE, of the city and county of Baltimore, State of Maryland, 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 forming part of this specification, in which—

Figure 1 is a bottom view, a portion of the axles and trucks having been removed. Fig. 2 is a perspective view, showing the end of a single car. Fig. 3 is a side view, showing the draw-bar; and Fig. 4 is a perspective view of the coupling-pin.

Similar letters of reference in the accompanying drawing indicate the same parts.

This invention relates to that class of car-couplings in which the draw-bar on one car is provided with a lateral shoulder or hook that engages with a similar hook upon the draw-bar of the adjacent car; and my improvement consists, first, in providing means for locking the draw-heads together when thus engaged; secondly, in constructing draw-heads of this class in such a manner that the draw-bars sustain both the draft and the recoil, so that all necessity for buffers is dispensed with; thirdly, in constructing the draw-heads in such a manner that the old-fashioned link-and-pin coupling can be used instead of the engaging-hooks; and lastly, in the details of construction, as hereinafter set forth.

In the drawing, A A' represent the draw-bars of two cars, constructed in the form clearly shown in Figs. 1 and 3, and coupling in the manner represented in Fig. 1. These draw-bars are attached to the cars at B B' in the usual manner, so that their projecting extremities will be capable of sufficient lateral play to enable them to engage and disengage. The draw-heads are expanded and are confined by means of straps C C', which permit their lateral movement but hold them from moving vertically. Another strap, D D', passes under the bars, and is made strong enough to sustain the whole draft upon them. Behind this strap they are enlarged, or provided with a shoulder, *d*, which, in case the screw-thread at *b* should slip, or the fastening should otherwise give way, will bear against the strap D and thus prevent the car from being left be-

hind. Springs E E', of any suitable construction, are applied to the sides of the draw-bars to insure their engaging with each other when the cars come together; and levers F are attached to the platforms and connected by chains *f* to the draw-heads, to enable the brakesman to uncouple them with ease. The draw-heads are peculiarly constructed. A square open slot or gain, *m*, is cut into the side of the plate, its width being a trifle greater than the distance between it and the end of the bar. A hook, *a*, is thus formed, which, when the cars are coupled, fits closely into the slot in the other head. The outer corner of the hook is rounded off so that they will slide past each other and engage automatically when the cars come together. On that side of the head to which the hooks project a shoulder, *e*, extends beyond the line of the hook, so that as the cars come together and the hooks slide past each other the ends of the latter will strike squarely against the shoulders, thus preventing the hooks from passing beyond the slots.

It will be observed that the shoulders are in line with the rear wall of the slots, or, rather, a continuation of said rear wall, so that the hooks, when arrested by them, as described, drop at once into the slots, through the action of the springs E E', and thus certainly and effectually couple the cars together. When once coupled each hook is held firmly between the front and rear walls of the slot, so that in drawing the cars the whole force is exerted upon the front wall, and in backing upon the rear wall; no buffers being used at all, but the elasticity of the coupling being derived solely from the springs concealed within the fastening plate or block B B'. In arranging the hooks to enter the slots in the manner described of course the slots must be made a little wider than the hooks to enable them to engage and disengage readily. This would give the hooks a little play back and forth in the slots when the cars were in motion, and thus produce a disagreeable jarring. Now, for the double purpose of locking the two hooks firmly together when coupled, and of preventing their longitudinal play in the slots, I make a recess or notch, *s*, in the rear wall of each, at such a point that when they are coupled the two notches will come together and form

a vertical hole, as shown in Fig. 1. Into this hole, which may be of any form, I drop a pin, P, which sets the hooks apart, causing them to fill up the entire slot, thus preventing all play back and forth, while at the same time it so keys the hooks together that no lateral pressure can separate them until the pin has been removed. The pin may be slightly tapering, so as to wedge the hooks apart, if preferred.

It will be observed that while the pin keys the two hooks together so that no lateral pressure can separate them, yet if the car jump the track, or be in any manner thrown off, in nine cases out of ten one of the draw-heads will be thrown up or down out of line with the other, so that the key will cease to operate and they will uncouple automatically; and it will also be observed that the key, when in place, operates as a pivot, upon which both draw-heads swing to a slight degree to give the necessary flexibility to the coupling.

So far as described, the draw-head could only be coupled to one of the same character, and great inconvenience would ensue on roads where much of the rolling-stock was of the old pattern. To obviate this I cut an open slot, *v*, into the square corner of each hook, of sufficient dimensions to admit the end of a coupling-link, and I provide a vertical hole, *n*, down through the head at that point to hold the coupling-pin. By means of these slots the old-fashioned link-and-pin coupling can be employed instead of the interlocking-hooks; and it can be used either when two draw-heads of my improved construction are to be connected,

or when a car having the new draw-head is to be connected to one having only the old. A train can thus be made up of the old and the new cars without any inconvenience whatever; and at any time, should the hook-coupling get out of order, the other can be resorted to at once and all delay be thereby prevented.

The coupling-pins are preferably made in the form represented in Fig. 4, and are connected to the draw-head by a chain, *p*. The middle of the pin is enlarged and provided with a staple to hold the chain. One end is fitted to occupy the space *s*, as above described, when the hook-coupling is used, and the other end is adapted to occupy the hole *n* when the link-and-pin coupling is employed. When not in use in connection with the hooks the pin can always be carried in the hole *n*. It will there be out of the way, and yet will be in the most convenient position for instant use whenever required.

Having thus described my invention, what I claim as new is—

1. The notches *s* of the hooks, in combination with the key-pins, substantially as and for the purposes described.

2. The coupling-pin P, having the enlarged middle portion with a staple for attaching the chain, and having a pin projecting from one end adapted to the old-fashioned coupling, and another projecting from the other end adapted to operate as a key in the hole *s*, substantially as specified.

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Witnesses:

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