J. McKINNEY.

CAR COUPLING.

No. 29,900. Patented Sept. 4, 1860.

Fig. 1.

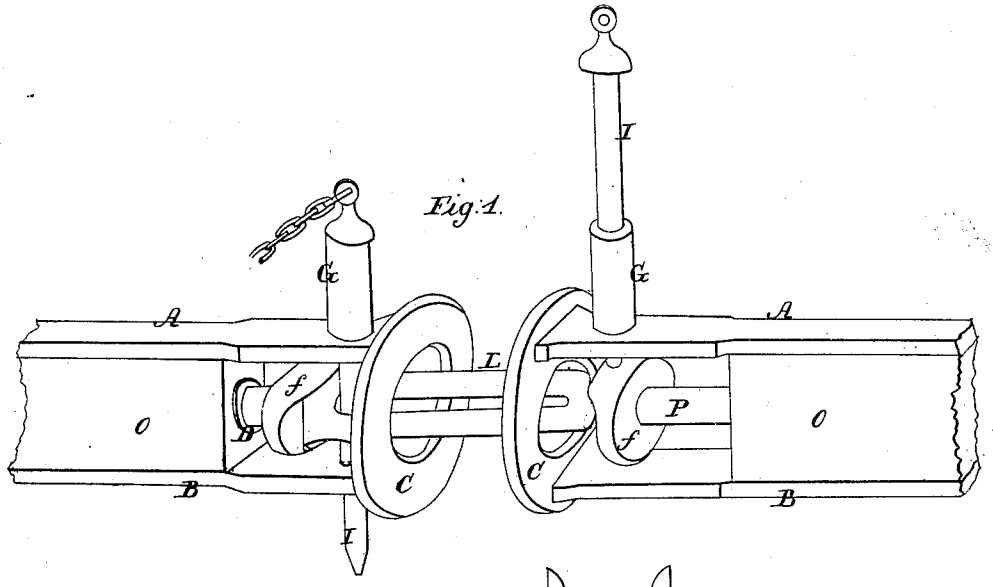
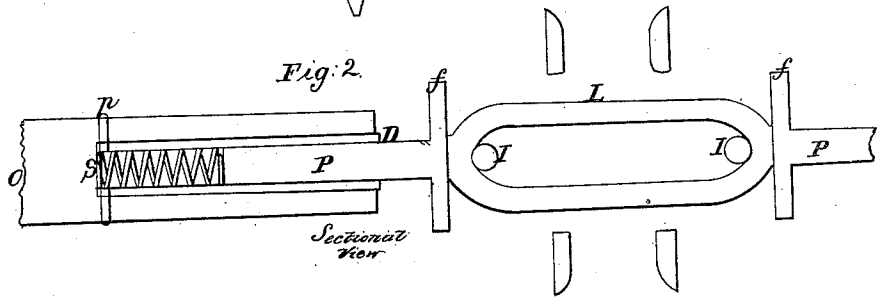
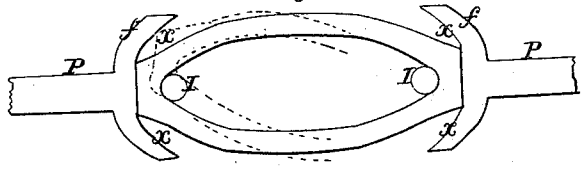


Fig. 2.



Sectional view

Fig. 3.



Witnesses

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JOHN McKINNEY, OF LANSING, MICHIGAN.

RAILROAD-CAR COUPLING.

Specification of Letters Patent No. 29,900, dated September 4, 1860.

To all whom it may concern:

Be it known that I, JOHN McKINNEY, of the city of Lansing, in the county of Ingham and State of Michigan, have made certain new and useful Improvements on Couplings for Railroad-Cars; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view; Fig. 2, a horizontal section through the link; Fig. 3, a detached section.

Similar letters indicate corresponding parts in all the figures.

The principal object of this invention, is to obviate the danger of going between cars in motion, for the purpose of coupling them together with the common link and bolt; a mode which is prevalent on nearly all railroads; and which, apart from the risk of life hitherto attending its use, is the most satisfactory and reliable form of coupling known, as well as the most simple, and I therefore propose, by two inexpensive simple additions, and a slight alteration of the link, to make this favorite coupling self acting, instead of having to steer the link, and enter the bolt by hand, as in the ordinary way, and the better to enable others skilled in the art to construct and use my invention, I will now proceed to describe it.

The parts indicated at A, B, C, represent a part of the well known "buffer frame," or "draft iron" in general use, and which needs no particular description, its inner prolongation, springs, and mode of attachment to the platform and body of the car, being precisely the same as may be now seen, with slight differences of construction, on almost every railroad car, which differences do not in any way affect injuriously the application of my improvement, which consists in the addition of what I denominate a spring plunger P, casing D, guide tube G, and a slightly altered link L.

The spring-plunger P is a short cylindrical bar of cast or wrought metal, and may be from 1¼ to 2 inches diameter, and is formed at the outer end with a flanched guard, as seen at *f*, of such radius and form in relation to the opening in the draw head C, that the end of the link cannot possibly slip past it, or fail to strike it, after entering said opening.

The casing D is merely a thin round pipe of cast or wrought metal, inside of which the plunger plays freely back and forth. A spiral spring of steel wire S or other suitable spring, is placed inside of this pipe or casing so as to force the plunger outwardly until the guard *f* comes directly under the bolt holes in the draw bars A, B, as may be seen in the right hand coupling, in Fig. 1. The means I usually employ to stop the plunger in this position and also prevent its turning, is to cast or form a longitudinal slot in the casing, and tap a pin into the body of the plunger through said slot. An auger hole is then bored, sufficiently deep in the center of the wood scantling O, between the two draw bars, A, B; and the casing and plunger are inserted therein, where they are secured by a check pin *p*. I do not wish however to confine myself to this, or any other particular mode of securing the plunger and casing, nor even to the employment of the casing at all; for it is evident that the plunger would work in a smooth bore formed by the auger, and could be stopped, and kept from turning by a pin and groove, or any other ordinary device.

The coupling link L, Figs. 1 and 2, is precisely the same as commonly used, excepting that it is flattened at one or both ends, and if considered necessary may be upset, so as to form side lips, to increase the bearing surface, for the purpose of being held horizontal when placed in the draw head, between the coupling bolt and guard of the spring plunger; should both ends of the link be flattened it would not matter which bolt was drawn to uncouple, but with only one end flattened, it would be necessary always to retain the bolt confining that end, in place.

The guide tube, G, is a short metal pipe forming a prolongation of the bolt hole in the upper wrought iron draw bar, and attached to the upper side of said bar in any convenient way, for the purpose of always holding the coupling bolt vertical, and guiding it so that when it drops, in the act of coupling, its pointed end will be certain to enter the opposite hole in the lower bar. Draw heads of cast iron may be made sufficiently deep at this point to supersede the necessity of a separate tube.

The coupling bolt, I, is the same as in common use, with the exception of the additional length required by the guide tube.

The operation of this self coupling ar-

rangement is very simple and reliable. Suppose two uncoupled cars to be provided with this improvement, the coupling bolts in the guide tubes resting on the plunger guards, and the unconnected link in the hand of the operator. To effect the coupling he is not required to touch the bolts, nor get between the cars when in motion. He first enters the flattened end of the link into the opening in one of the draw heads, and pushes back the plunger, when the bolt drops into the lower hole, and the spring is allowed to press back the guard against the link and bolt, so as to hold up the link horizontally in line with the center of the opening in the opposite draw head. Either one of the cars is now started in motion, when the projecting end of the link strikes against the opposite plunger, (see Fig. 1,) and pushes it back, its bolt drops from the guard, and the coupling is performed automatically, with unerring certainty, and safety.

To uncouple, one of the bolts is lifted by hand far enough out of the guide tube, to allow the plunger guard *f* to spring past and support it, when it is ready again for use.

Various modifications of the form of the link may be used to suit draft irons of different proportions. For instance, instead of making the link of uniform width, it may bulge outward, so as to diminish in width toward the ends as exhibited in Fig. 3, and a recess may be sunk in the face of the guard *f* with beveled sides as seen at *x*, *x*, so that in coupling on a sharp curve with the link out of line, its comparatively narrow point will impinge on the angular sides, and be drawn toward, and confined to the center, while the bolt will be dropped through the wide central space between the sides of the link.

Having thus fully described my improved car-coupling, I would remark in relation thereto, that I do not claim to be the inventor of the combination of a spring-actuated movable-block with a buffer-frame for the purpose of supporting the draft-pin—when unemployed—in a vertical position; but

What I do claim as new and desire to secure by Letters Patent in my improved car-coupling, is—

1. Giving such a shape to the head of the spring-actuated shaft P, and such a degree of strength to its spring, that the flat-head of the link, (L,) when placed within the buffer-frame, will be so closely embraced between the said spring-actuated head and the draft-pin, as to retain said link in a horizontal position, when unemployed, substantially as herein set forth.

2. The vertical tube G, which rises from the draft-pin-aperture in the upper plate of the buffer-frame and serves the purpose herein set forth.

JOHN McKINNEY.

Witnesses:

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