E. L. SANFORD.

Car-Coupling.

No. 168,345. Patented Oct. 5, 1875.

Fig. 1.

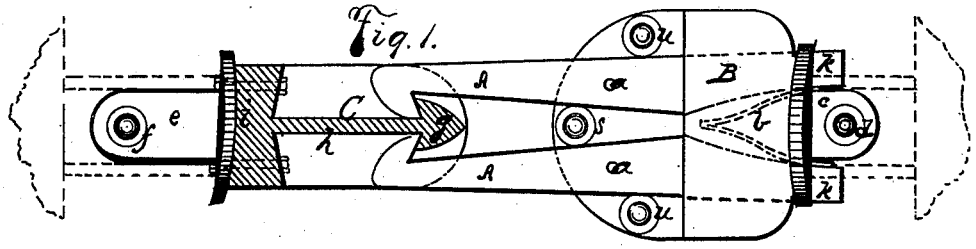


Fig. 2.

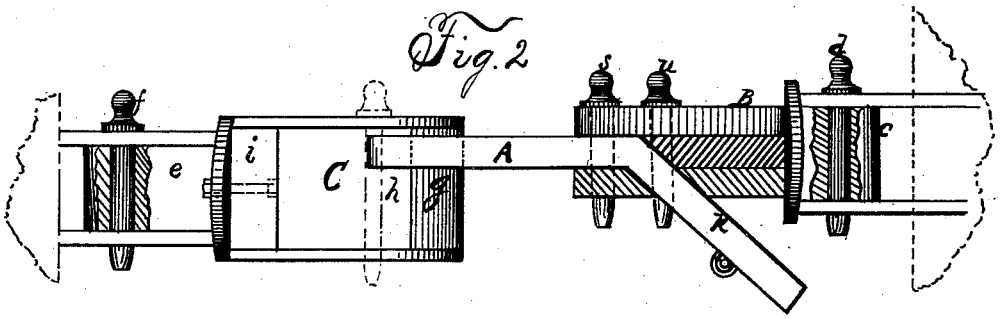


Fig. 3.

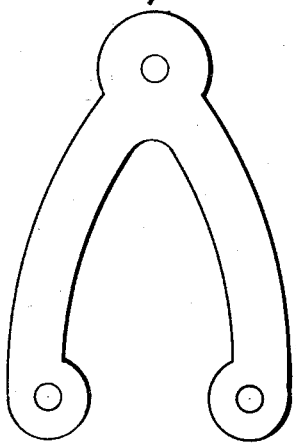


Fig. 5.

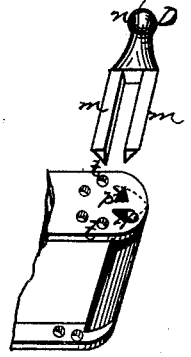
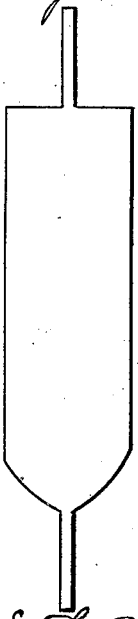


Fig. 4.



Witnesses:
T. H. Parsons.
C. N. Woodward.

E. L. Sanford
Inventor,
By his attorney
J. R. Drake.

UNITED STATES PATENT OFFICE.

EDWIN L. SANFORD, OF PAVILION, ASSIGNOR OF ONE-HALF HIS RIGHT TO SANFORD P. MOON, OF MIDDLEBURY, NEW YORK.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **168,345**, dated October 5, 1875; application filed May 13, 1875.

To all whom it may concern:

Be it known that I, EDWIN LA GRAND SANFORD, of Pavilion, in the county of Genesee and State of New York, assignor to myself and SANFORD P. MOON, of Middlebury, county of Wyoming and State of New York, have made certain Improvements in Car-Couplings, of which the following is a specification:

This invention relates to hook-headed car-couplings, and the improvements will be first described, and then specifically pointed out in the claims, a preliminary description being deemed unnecessary.

In the drawings, Figure 1 is a plan; Fig. 2, side elevation; Figs. 3, 4, and 5 detail views.

A A represent two longitudinal hooks, each pivoted in a head, B, at *a a*, the engaging ends provided with the ordinary shaped hooks, as shown, and the inner ends *k k* projecting down at an angle through the head B, and having a spring or springs, *b*, set between them to keep the outer ends or hooks engaged, as shown in Figs. 1 and 2. This head B has a tongue, *c*, which projects back into the usual draw-head of a car, the usual pin *d* of the draw-head holding it in place therein; or, it may be of itself attached directly to the car-platform, if put on new cars.

In the opposite draw-head of an opposite car will be set my draw-bar device C, formed substantially in the shape shown, the back *i* constructed with a projecting lug or tongue, *e*, through which the usual draw-head pin *f* passes to hold it in said draw-head. The front part of this device is provided with a vertical arrow-head-shaped engaging-piece or double catch, *g*, the edges or faces beveled off so that the hooks A A will slide over and catch on the concaved inner faces of said catch *g*, as shown in Figs. 1 and 2. The top and bottom of the draw-bar C form caps to prevent the hooks from throwing up or dropping down, and, in backing, the hooks slide along the central plate *h* and force against the concaved back piece *i*. This draw-bar C will all be formed in one piece.

The whole device will be quite wide vertically, so as to insure engaging with cars of unequal heights.

These two simple devices, A, B, and C possess the great advantage of allowing their attachment to the ordinary draw-heads of freight or other cars, or they can be attached directly to new cars and without any considerable expense.

The uncoupling is performed by a key, D, (see Fig. 5,) which is constructed with two prongs, *m m*, and a head, *n*. Each prong is of triangular shape, with inclined outsides, and is set into a corresponding opening, *p*, through the cap of the draw-bar C, in close proximity to the catch *g*, (see Fig. 5,) thus closing up the concaved catches. When thus set, the hooks, as soon as the car is pulled forward, slide up the inclined sides of the key and slip off the beveled faces of the catch *g*. One or two of these keys, in possession of a conductor or other person, will be all that a single train will need, as but one or two cars are usually uncoupled at a time, though one may be chained to each car, if desired. This device makes the uncoupling automatic, with the slight exception of previously setting the key into the head, as explained, and it can always be set when the train is at a stand-still without danger to the brakeman or other person. The key is preferably made in one piece, but it may be hinged in the middle to accommodate it to holes wider apart or closer together. A double advantage is obtained from the use of the two longitudinally-acting hooks instead of one, as the side swaying and running of curves frequently throws off the single hook, thereby uncoupling the cars; but with two, if one has a tendency to throw out, the other "bites" all the tighter.

Fig. 4 shows a flat link with open ends, for the purpose of coupling the hook end of a car to an opposite car that has not my draw-bar device; also for attaching to a locomotive; or the bar of the locomotive can be coupled to the hook-head by the central pin *s* set between the hooks A A. This will only be needed occasionally when some cars are permanently rigged with my hooks, while others in the train have the old link and pin.

The V-shaped link (see Fig. 3) will only be needed when a car has my draw-bar device C, and the opposite car has the old style of coupler. The forks of this link go each side

of the draw-catch *g*, and pins *t t* in the draw-bar C will hold them, while the other end of the link goes into the usual draw-head opposite, and the ordinary pin holds it.

The side pins *u u* of the hook-head B are for the use of links in connection with cars of wider or narrower gage. In coupling wide and narrow gage cars with my invention, the link will not run so obliquely as with the present style of coupling, but will run nearer from center to center of the draw-heads, the link being nearly straight from pin to pin.

I claim—

1. The hooks A A, pivoted within the draw-head B, and having their angular rear ends *k k* passing through the bottom of the draw-head, in combination with the spring *b* arranged between said angular ends of the hooks, as and for the object specified.

2. The uncoupling-key D, formed with the two triangular prongs *m m* and head *n*, and in combination with the draw-bar C, with the corresponding openings *p p* therein, and the beveled catch *g*, all as and for the purpose hereinbefore set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

EDWIN L. SANFORD.

Witnesses:

T. H. PARSONS,

SANFORD P. MOON.