(No Model.) 2 Sheets—Sheet 1.

J. DARLING.

CAR COUPLING.

No. 306,065. Patented Oct. 7, 1884.

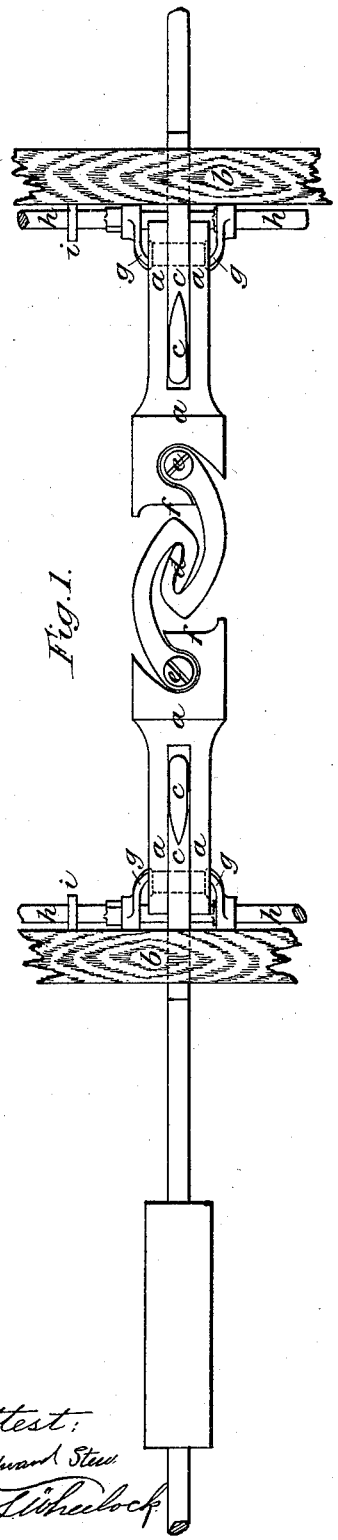

Fig. 1.

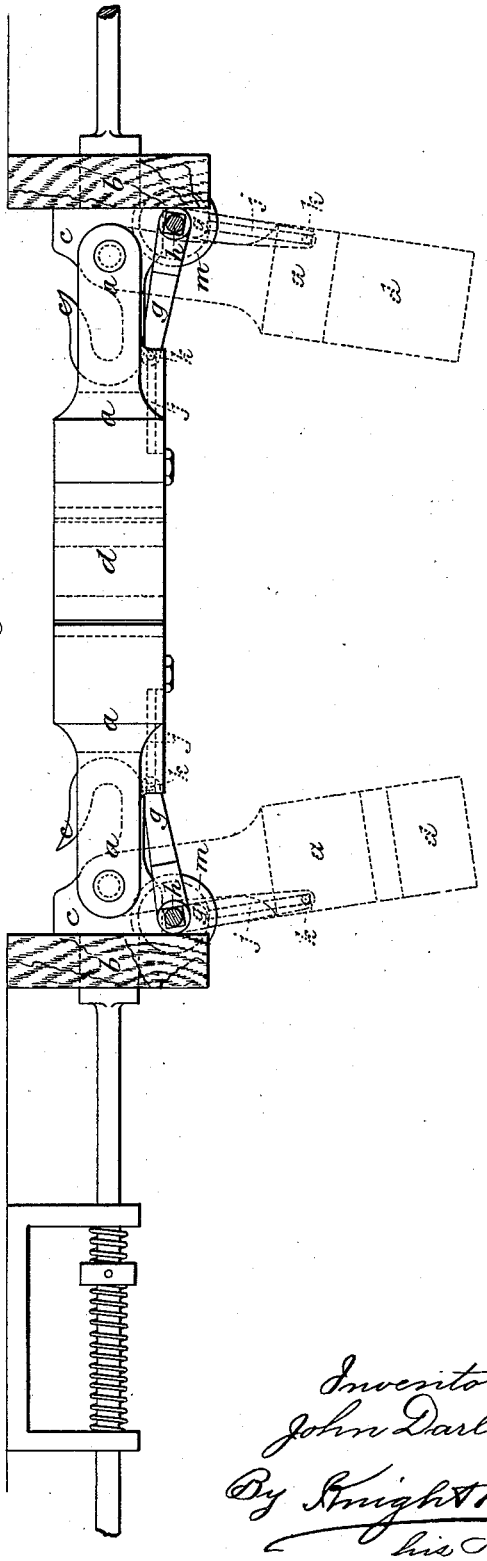

Fig. 2.

Attest:
Edward Stern
Geo. L. Wheelock

Inventor:
John Darling,
By Knight Bros
his Attys.

(No Model.) 2 Sheets—Sheet 2.

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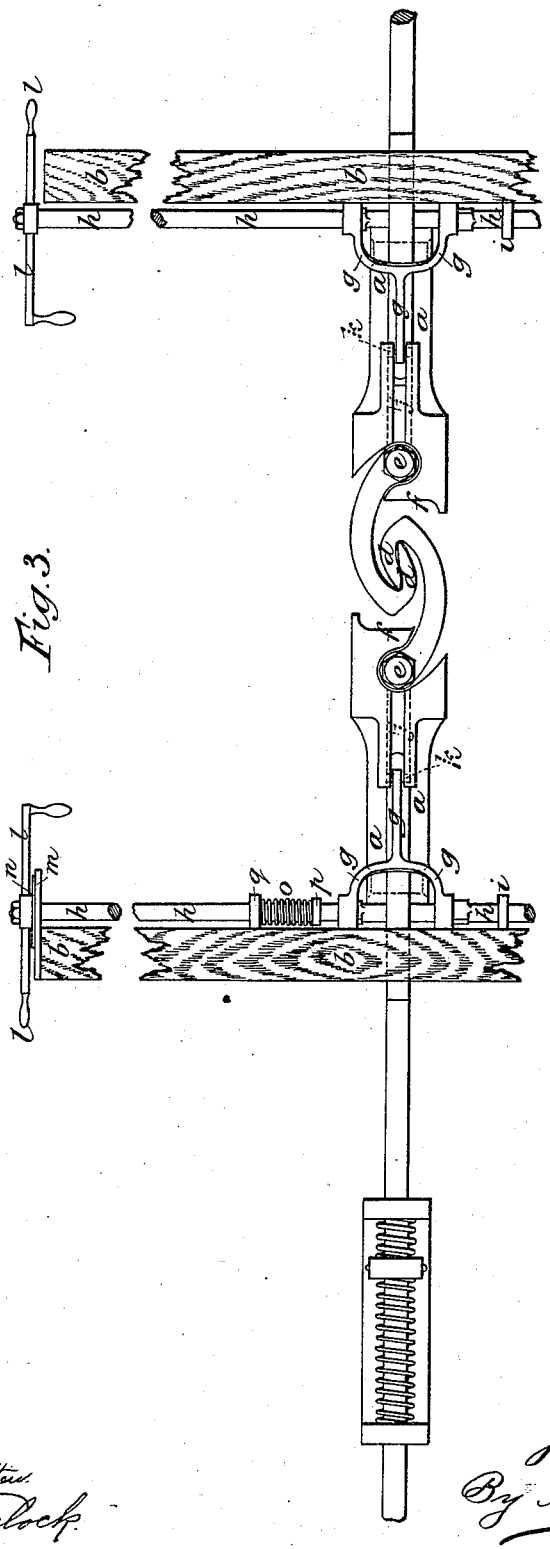

Fig. 3.

Attest:
Edward Stew.
Geo. L. Wheelock.

Inventor:
John Darling,
By Knight Bros
his Attys.

UNITED STATES PATENT OFFICE.

JOHN DARLING, OF GLASGOW, COUNTY OF LANARK, SCOTLAND.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 306,065, dated October 7, 1884.

Application filed February 16, 1884. (No model.) Patented in England July 13, 1883, No. 3,449.

To all whom it may concern:

Be it known that I, JOHN DARLING, of Glasgow, in the county of Lanark, Scotland, have invented Improvements in Coupling and Uncoupling of Railway Carriages, Trucks, and other Vehicles, and in the apparatus or means employed therefor, (for which I have received Letters Patent of the United Kingdom of Great Britain and Ireland, No. 3,449, dated July 13, 1883, and in no other country or countries.) The following is a specification of the invention:

This invention relates to improvements in coupling and uncoupling railway carriages, trucks, and other vehicles, and in the apparatus or means employed therefor.

In carrying this invention into practice there are provided in the shanks of the vertical coupling-hooks vertical hinged joints outside the buffer-beams, so that the said hooks are hinged thereto. Against the backs of the hooks springs are caused to bear in a forward direction, and to the front of the said shanks stops are provided, so as to prevent the hooks from being uncoupled in any but a vertical direction, but enabling them to couple themselves automatically when any two vehicles fitted with the said coupling-hooks approach each other. Any arrangement of spring may be used to keep the coupling-hooks in their required position.

In the drawings, Figure 1 is a plan of the upper side of a pair of couplings constructed according to and constituting my present invention. Fig. 2 is a side elevation of the same. Fig. 3 is a plan of the under side of the same.

In carrying out my present improvements I pivot the shanks *a* of the coupling to any buffering projection that may be provided on the buffer-beam *b*, or preferably, as shown on the accompanying drawings, to the existing hook *c* of the ordinary link-coupling.

The improved coupling-hooks *d* are formed with the vertical hinged joints *e*, and they are hinged to the shanks *a* of the couplings. Spiral or other equivalent springs are caused to bear upon the hooks *d* in such a direction as to return the said hooks to the position in which they are represented on the accompanying drawings after they have been deflected from such position either from coupling or other reasons. When the coupling-hooks *d* are acted upon by spiral springs, (as in the coupling represented,) these springs are secured at one end to the pins upon which the hooks *d* work, and at their other or opposite end to the said hooks *d*. The shanks *a* are provided with the projections *f*, to prevent the hooks *d* disengaging with each other in any direction other than a vertical direction, which is imparted to the said coupling-hooks by means hereinafter described.

The projections *f* enable the hooks *d* to couple themselves automatically when any two vehicles fitted with the said couplings approach each other. Under these circumstances the forward ends of the hooks *d* come against and pivot on the forward ends of the said projections *f* of the opposite couplings, and the points of the hooks *d* thereby pass over and couple with each other.

The vertical motion before mentioned is imparted to the couplings by means of the bifurcated levers *g*, which are carried at one end on squares formed on the shafts *h*, which are supported in bearings *i*, fixed to the buffer-beam *b*; or the shaft *h* may be carried in any other convenient manner.

At the under side of the shanks *a* the guides *j* are formed, as represented in dotted lines on the accompanying drawings, for the working therein of the pins or projections *k*, formed on the levers *g*.

At the ends of the shafts *h* there are secured the hand-levers *l*, and the said shafts *h* are also provided with stops of any suitable construction, for retaining the couplings in position after they have been coupled or uncoupled.

In the stop arrangement represented there is provided the plate *m*, secured to the end of the buffer-beam *b*, or to any other convenient part, and the disk *n*, carried by the shaft *h*.

In the disk *n* there is fixed a pin, which enters holes formed in the plate *m*, these holes being drilled in the necessary position for retaining the couplings either in a coupled condition or in an uncoupled condition, as shown in dotted lines. The spring *o* is provided to retain this stop arrangement in these positions, and is in compression between the collar *p* or

its equivalent, formed on the shaft *h*, and the bearing or fixed collar *q*. The squared portion of the shaft *h* allows of the said shaft being drawn lengthwise through the arms of the lever *g*, and at the same time allows the said lever *g* to be raised or lowered by means of the said shaft *h*.

The pivoting of this coupling mechanism to the existing hook of couplings admits of two vehicles, one provided with these improvements and the other not so provided, being coupled together by means of the ordinary link-coupling.

I claim—

1. The combination of a horizontally-hinged shank having a guide formed on the under side thereof, hook vertically hinged to the shank, lifting-lever having projections to work in said guide, and a shaft by which the lever is raised and lowered, as set forth.

2. The combination of a horizontally-hinged shank, *a*, having a projection, *f*, and guide *j* on the under side, hook vertically hinged to the shank, bifurcated lever *g*, whose end works in said guide to raise and lower the shank, a shaft to which the lever is secured, and means to retain the shaft in desired position, as set forth.

3. For coupling and uncoupling railway carriages, trucks, and other vehicles, the apparatus consisting of the shanks *a*, vertical hinged hooks *d*, projections *f*, guides *j*, plate *m*, disk *n*, spring *o*, and their attachments, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN DARLING.

Witnesses:

ROBERT ADAM GUNN,

DAVID KENNEDY,

Both of 115 *St. Vincent Street, Glasgow.*