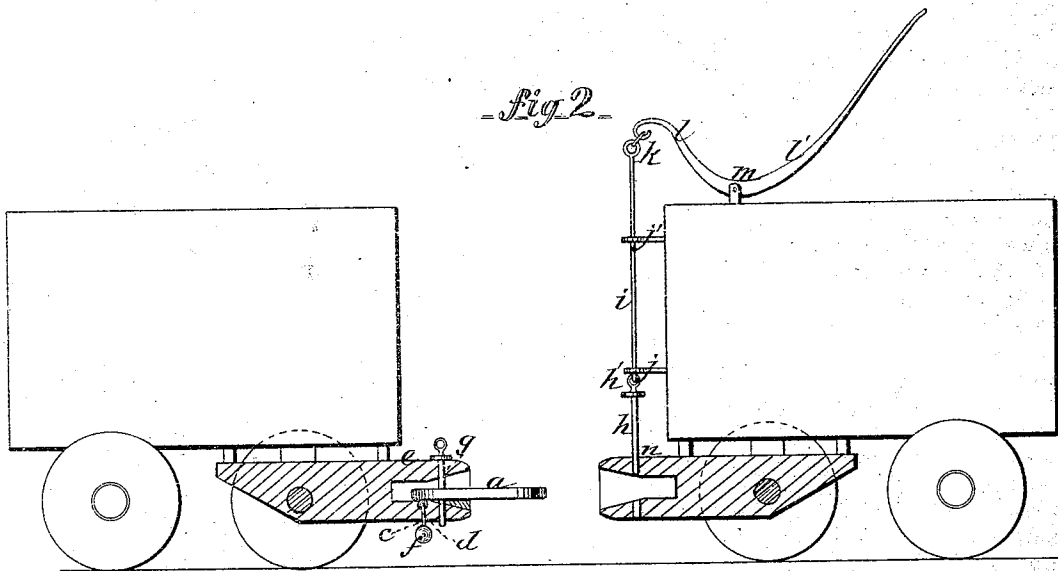
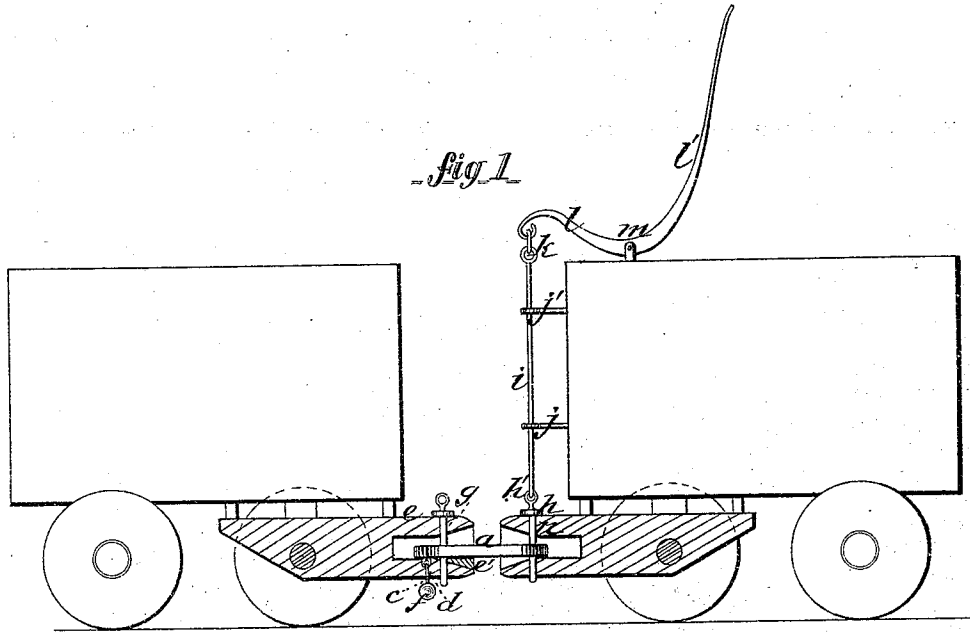


F. A. GARDNER.
Car-Couplings.

No. 153,330.

Patented July 21, 1874.



Witnesses

J. Rutherford
Benjamin C. Pole.

fig 3

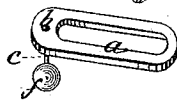


fig 4



Inventor

Francis A. Gardner

by Johnson & Johnson
his Attorneys

UNITED STATES PATENT OFFICE.

FRANCIS A. GARDNER, OF NORTH LIBERTY, OHIO.

IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. **153,330**, dated July 21, 1874; application filed April 13, 1874.

To all whom it may concern:

Be it known that I, FRANCIS A. GARDNER, of North Liberty, in the county of Knox and State of Ohio, have invented certain new and useful Improvements in Railway-Car Couplings, of which the following is a specification:

The invention herein relates to couplings, more especially applicable to railway-freight trains, in which the uncoupling is effected from the top of the car; and the particular features of my invention consist, first, of a balanced lever pivoted to the top of the car, in combination with a connecting-rod arranged in guides, and the coupling-pin, whereby the pin and its vertical connecting-rod are maintained in position for coupling, and caused to descend by the concussion of the cars, which automatically causes the lever to turn upon its pivot by a forward movement, and to be held in such position by the weight of the pin and its connecting-rod, thus rendering the cars self-coupling by the concussion produced from their contact with each other through the intervention of the counterpoise-lever; second, in the combination of the pivoted balanced lever, the coupling-pin, and the rod which connects them, with a stop, which also forms the lower guide for the connecting-rod, by means of which stop the ascent of the coupling-pin is limited, and the lever held in position just to overcome the weight of the coupling and its rod, so as to render their descent automatic from the effect of the bumping of the cars, and to keep the pin in position for such action; third, of a coupling-link, having a suspending weight at one end, held in place beneath the bumper, in combination with a separate seat-plate arranged upon the lower flaring inner side of the bumper, whereby an ordinary short link may be used with an ordinary flaring bumper, and the link held in a horizontal position upon said seat by the pendent weight, the cord or chain whereof passes through the bumper to connect with the inner end of said link.

In the accompanying drawings, Figure 1 represents a vertical section of the coupling-device, as coupled; Fig. 2, a similar view with the balanced lever raised in position to effect the automatic coupling.

The link *a* has a small hole, *b*, in one end, to

which is connected a wire rod or chain, *c*, passing through a hole, *d*, in the bottom of the bumper *e*, and provided with a weight, *f*, sufficient to hold and carry the link in a horizontal position. In cast-iron bumpers the bottom of the mouth is usually made flaring downward, and, when uncoupled, the link drops down at its outer end. To adapt the weighted link to such bumper, I employ a separate iron plate, *e'*, of tapering form to fit the mouth, and make a horizontal seat for the weighted link, so that its position is always kept level for being uncoupled. This separate plate *e'* is held in place by the coupling-pin *g* passing through a hole, *g'*, and by the weight of the link which rests upon it; and, as these parts do not require unshipping, they are only required at one end of each car; and, by means of this separate seat-plate *e'*, the weighted link can be applied to flaring car-bumpers now in use. The coupling-pin *h* at the other end of each car is connected, by an eye-joint, *h'*, to a vertical rod, *i*, held in place by guide-arms *j j'* projecting from the end of the car, the upper end of said rod terminating about on a level with the top of the car, and connecting, by a link-joint, *k*, with the curved end *l* of a lever, *l'*, suitably pivoted to the top of the car at *m*, and whose handle curves rearward, or is so formed as to act as a counterpoise, when depressed, to both the coupling-pin *h* and its rod *i*, to hold them up in position for being coupled, the connection of the lever with the rod being such as to allow the latter and the pin to move freely in a vertical line with the hole *n* in the bumper, and to permit the lever to move upon its pivot *m* without affecting its position as a counterpoise. In its function as such it holds the coupling-pin *h* up, the limit of its ascent being governed by the contact of the eye-joint *h'* with the lower guide *j*, and in this position the coupling-pin *h* is free to descend by the forward movement of the lever, which is effected automatically by the concussion produced at the moment the bumpers meet, the lever being adjusted to so nearly balance the coupling-pin and its connecting-rod that the concussion causes the said lever to turn upon its pivot and fall forward, allowing its coupling-pin to descend and make the coupling.

To uncouple the cars, the lever *l'* is simply

depressed as far as the stop-guide *j* will allow, and holds up the connected pin *h* by the weight of its handle. The uncoupling, however, may be made from the ground by taking hold of the rod *i* at the top of the pin *h*, and raising it up until the balance-lever will hold it up. The uncoupling can also be done and the brakes put on at the same time, and the lever only requires to be pressed down an instant to withdraw the pin, when its further function requires no attention.

I claim—

1. The balanced lever *l* *l'*, in combination with the connecting-rod *i* and the coupling-pin *h*, substantially as and to operate as described.

2. The combination of the balanced lever *l* *l'*, and its connected rod *i* and coupling-pin *h*, with the guide-stop *j*, substantially as and for the purpose set forth.

3. The coupling-link *a* with its weight *f* suspended by a chain, *c*, passing through the bumper, in combination with the separate seat-plate *e'*, whereby a short link is held in a horizontal position within a flaring bumper, as set forth.

FRANCIS A. GARDNER.

Witnesses:

S. M. VINCENT,

S. J. VINCENT.