T. H. CROSS.

Car-Couplings.

No. 142,993. Patented September 23, 1873.

Fig. 1.

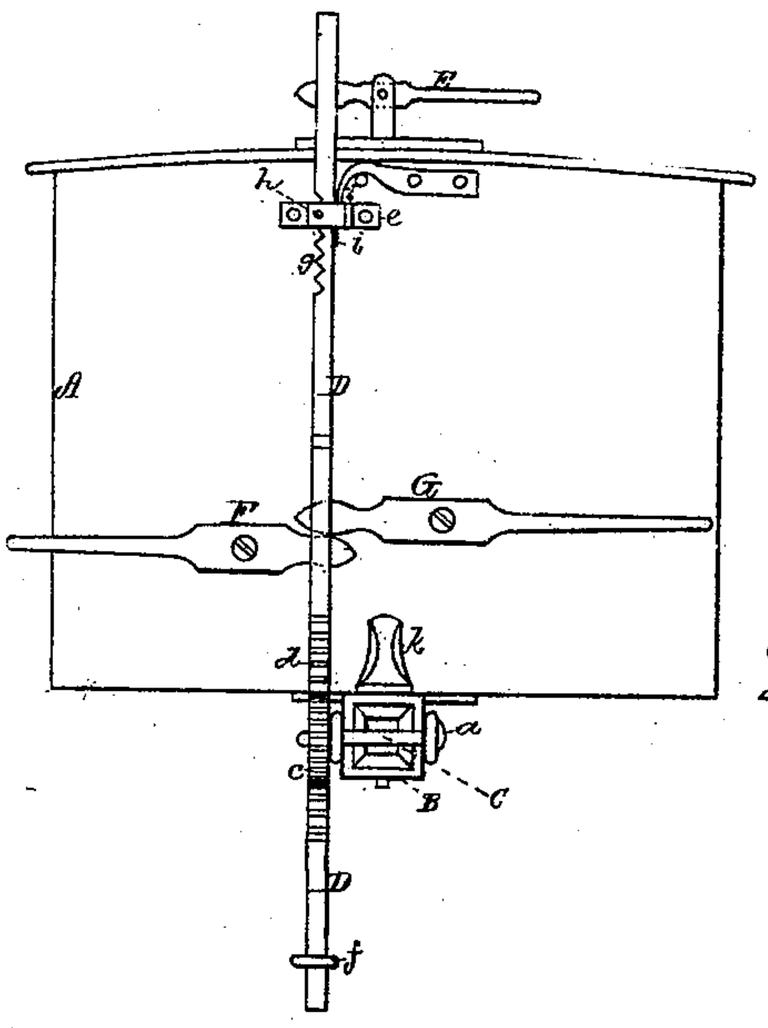


Fig. 2.

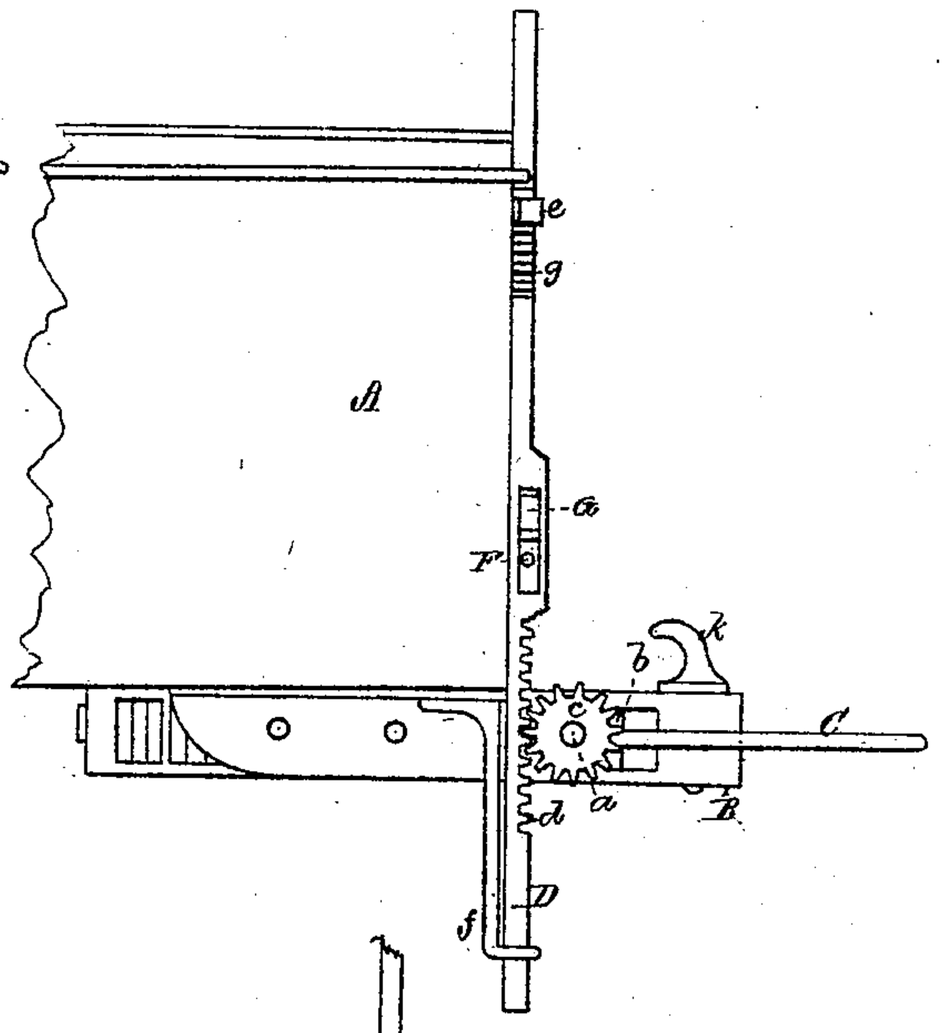


Fig. 3.

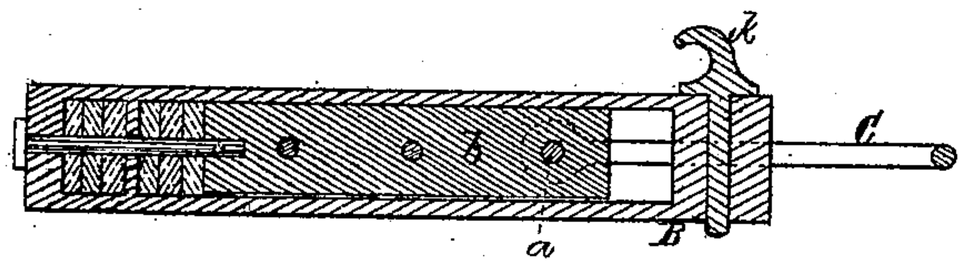
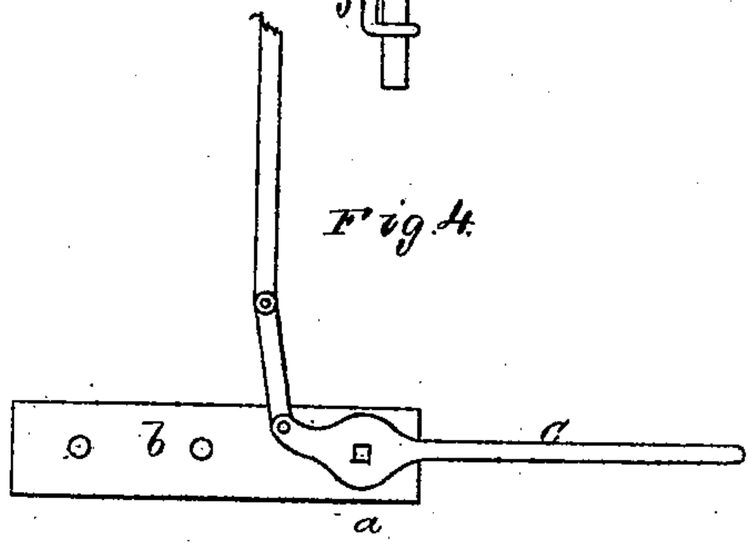


Fig. 4.



Witnesses.

Geo Gray

F. C. Hall

Thomas H. Cross.

by his attorney.

F. P. Hale

UNITED STATES PATENT OFFICE.

THOMAS H. CROSS, OF EAST BOSTON, MASSACHUSETTS.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **142,993**, dated September 23, 1873; application filed May 5, 1873.

To all whom it may concern:

Be it known that I, THOMAS H. CROSS, of East Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Couplings for Railway Cars or Carriages, of which the following is a specification:

The object of my invention is to provide a simple and effective means of connecting and disconnecting railway-carriages, whereby the liability of accident to life and limb incident to cars as ordinarily constructed is completely obviated; and my invention consists in providing each bunter of the car with a hooked pin and a pivotal vibratory link, provided with mechanism, as hereinafter described, whereby the coupling or uncoupling of the cars may be readily effected without the necessity of a person going between them. My invention is adapted to either freight, passenger, or coal cars.

Figure 1 is a front-end elevation of the body of an ordinary freight-car provided with my invention. Fig. 2 is a side elevation thereof. Fig. 3 is a vertical section of the bunter and the draw-bar.

In the accompanying drawing, A denotes the body of an ordinary freight-car, the same being provided with bunters or buffer-heads B, of the usual character. C is the coupling-link, which is pivoted to a shaft, *a*, extending transversely through the draw-bar *b*, which, by means of supporting-plates, is securely fixed to the body of the car. As shown in the drawing, this bar is of a rectangular shape, and is disposed within a chamber formed within the bunter, which is of the ordinary skeleton form, and provided with mechanism of the usual character for relieving the concussion of the cars when brought together. *c* is a pinion affixed upon one end of the shaft *a*, and engaging with a rack, *d*, upon the slide-bar D. This bar is disposed in the first part of the car-body, and is supported in guides *e f*, so as to enable it to be moved freely up and down. E is a hand-lever affixed to the bar D. F and G are levers pivoted to the body and near its lower part, these latter levers having their shorter arms extended into a slot formed in the bar D, and their longer arms extended out to the sides of the car, and in such position as to enable them to be readily operated by a person standing at the side of the car. The said bar D is also provided near its top with a rack, *g*, which operates with a tooth or shoulder, *h*, disposed on the inner face of the guide *e*, a spring, *i*, arranged as shown in Fig. 2, serving to retain the two in engagement, and thus maintain the link when moved into any desired position in a fixed or locked state. *k* is a hooked pin which extends down through the bunter-head, to which the link of the adjacent car, when coupled, is to be connected. Each bunter is provided with a hooked pin and link, but only one link and pin being employed at one time, the other being for use in case of accident to their fellows. The hand-lever at the top of the bar D is to enable a person standing on the top of the car to either couple or uncouple the cars, as may be desirable. The side levers F and G enable a person on the ground to readily effect the same results.

The above-described construction is especially adapted to freight-cars. For passenger-cars the bar D should be shortened, the top hand-bar being arranged at such a height as to be readily operated from the platform, the side levers remaining the same.

A modification of my invention or mode of connecting the bar D with the link is shown in Fig. 4, the same consisting in making such bar with a joint, and connecting it directly with the link.

For low coal-cars the link-shaft may extend the width of the car, and be operated by a hand-wheel on each of its ends.

By taking hold of the aforesaid levers and moving the same either up or down, the rack of the bar D will be made to so act upon the pinion-shaft of the link as to vibrate and either raise or lower the latter to any desired degree, to either couple the link with the pin of an adjacent car or disconnect it therefrom, as may be desired.

From the above it will be seen that the peculiar feature of my invention is the pivotal vibratory link, combined with a hooked pin, disposed on the top of the bunter, the link being provided with mechanism by which the latter may be moved into engagement with the hooked pin, or disconnected therefrom,

when the bunters of two cars are brought together, and without the necessity of a person going between them.

It will also be seen that my invention can be readily applied to old cars of the ordinary construction without disarranging the old method of connecting, so that such might still be used should it become necessary.

It will also be further seen that by my construction and arrangement cars whose bunters may vary in height may be as readily connected and disconnected as those whose bunters are in the same horizontal plane, provided the difference is not so great as to cause one to override the other.

What I claim is—

The link C, pivoted to the draw-bar *b*, and operated by means of the bar D, having rack *g*, and the levers E F G, as described.

THOMAS HENRY CROSS.

Witnesses:
F. P. HALE,
F. C. HALE.