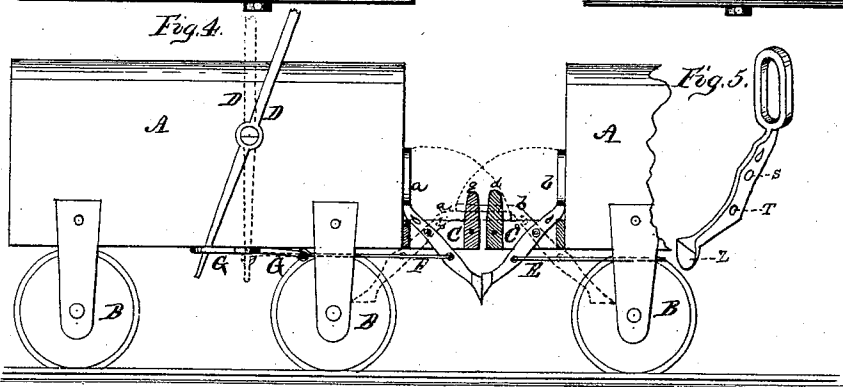
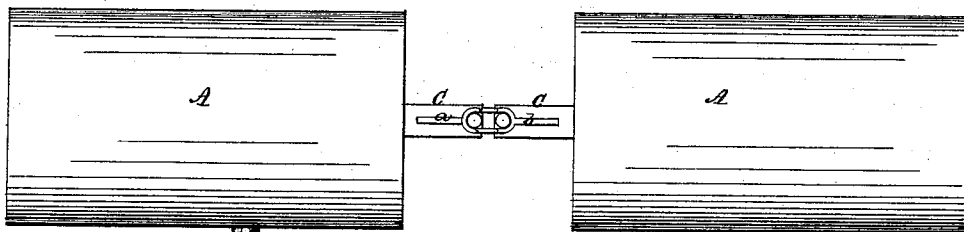
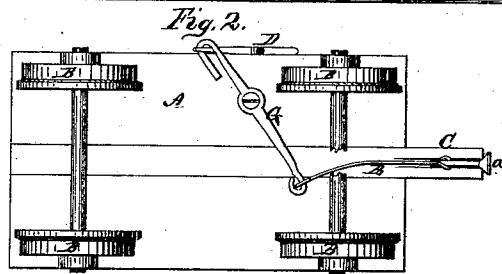
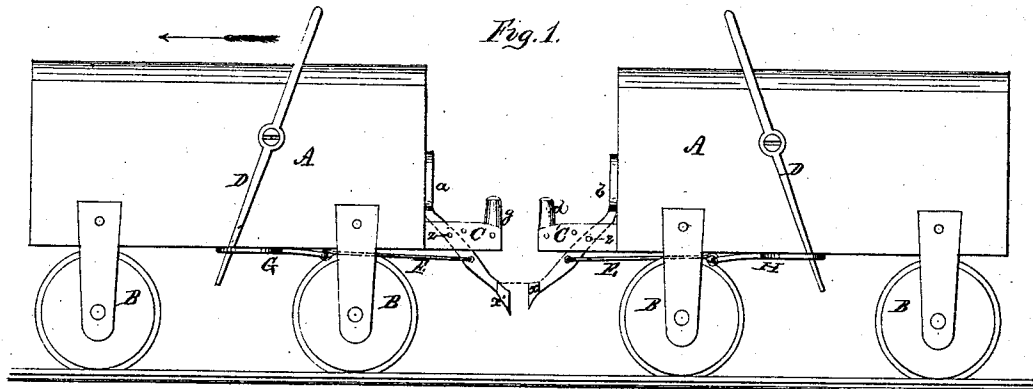


S. MAHURIN.
Car Coupling.

No. 109,830.

Patented Dec. 6, 1870.



Witnesses
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STEPHEN MAHURIN, OF LIBERTY, ASSIGNOR TO HIMSELF, JAMES W. SINGLETON, AND WILLIAM A. RICHARDSON, OF QUINCY, ILLINOIS.

Letters Patent No. 109,830, dated December 6, 1870.

IMPROVEMENT IN CAR-COUPPLINGS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, STEPHEN MAHURIN, of Liberty, in the county of Adams and State of Illinois, have invented a new and useful Improvement in Car-Couplings, of which the following is a specification, reference being had to the accompanying drawing.

Nature and Objects of the Invention.

My invention relates to that class of railway-car couplings which is automatic in its action, the attachment being effected by the buffers or feet of the coupling-bars coming in contact with each other, and as the bars are so hung as to swing vertically, having a preponderance of weight at the link end by the concussion, the buffers are forced backward, bringing each link forward over the pins or projections with which the platform immediately in front of the coupling-bar is provided.

The links are raised and the cars uncoupled by means of a draw-rod secured to the coupling-bar below the axle on which it swings, the opposite end being attached to one end of a lever of the first kind, which is pivoted and swings parallel to the under side of the car. The opposite end of this lever projects beyond the side of the car, and is there attached to the lower end of a second lever pivoted and swinging parallel to the side of the car. The upper end of the last-named lever projects above the roof of the car, and is provided with a handle, by means of which it may be operated, a forward movement serving to elevate the link and uncouple the cars, a backward movement to lower the link and attach the cars.

Description of the Accompanying Drawing.

Figure 1 in the accompanying drawing is a side elevation of two railway cars uncoupled, on which is shown a device embodying the invention. The arrow indicates the direction of the head of the train, and the device is represented as attached to the rear platform of one and the front platform of the other of the cars.

Figure 2 is a plan view of the under side of the car, showing the arrangement and relation of the lever D, draw-rod E, and coupling-bar a.

Figure 3 is a detached top view of the platforms, with the links as they appear when the cars are coupled, a portion of the upper link being broken out.

Figure 4 is a side view, showing the movement of the coupling-bars a and b, one side of the platform being removed.

Figure 5 is a detached perspective view of the coupling-bar.

General Description.

Fig. 5 in the accompanying drawing is the coup-

ling-bar, which consists of a bar of metal of greater width than thickness, provided at one end with a link of such interior dimensions as to freely inclose, when the platforms are in contact, both of the projections g and d. The link stands at an angle of about forty-five degrees to the main portion of the bar.

At the point S is provided an aperture for an axle on which the bar swings. This aperture must be at such a point in the bar as that, when the bar is hung, its weight shall decidedly preponderate on the link end, and also so that the distance from the center of the aperture to the inner curve of the link furthest from the aperture shall exceed the distance from said aperture, when the platforms are in contact, to the opposite side of the projection or pin on the car to that having the link to be coupled.

Below the aperture S is a hole, T, to receive one end of the draw-rod E.

The lower end of the coupling-bar, fig. 5, is provided with a foot or buffer, z, of such superficies as that, when the cars are on a level, the face of one buffer will, when the cars are brought together, come in contact with some portion of the face of the other. The plane of the face of the buffer is at an angle of forty-five degrees to the vertical central plane of the body of the bar, and is parallel to the vertical plane of the link. When the coupling-bar is properly hung the face of the buffer fronts in the same direction as the end of the bar to which the device is attached.

The coupling-bars a and b are similar in construction, except that the bar b is shorter, and thus its buffer is nearer the under side of the platform C than the face of the opposite buffer, as shown at fig. 1.

Both coupling-bars are similarly hung, with their links above the platforms, and swing in the vertical slots, which are of such dimensions as to allow the body of each bar to move freely backward and forward until the link comes in contact either with end of the car or is thrown into coupling position.

Each platform is provided, at its extreme edge, with points, projections, or pins g and d, of such height as that the links can readily pass over them and yet not easily be thrown off by the movements of the cars.

The coupling-bars a and b and the projections g and d should be in the vertical central plane of the car.

One end of each car should be provided with the coupling-bar a and its appurtenances; the other end with the coupling-bar b and its appurtenances. In this manner uniformity and certainty of operation are secured.

The object of having the coupling-bar b shorter than the other, a, and consequently one buffer more elevated than the other, is in order that the semi-revolution the bar b performs when the buffers z and z'

come in contact may be less, so that the link *b* will be in position over the projections *g* and *d* before the semi-revolution of the bar *a* could bring its link in contact with the link of the former, thus avoiding the possibility of the links striking each other and failing to pass over the projections, thereby preventing the coupling of the cars.

The aperture *S* receives one end of the draw-rod *E*, the other end of which is secured to one end of a lever, *G*, which is pivoted to the bottom of the car, and swings parallel thereto in such a manner as not to interfere with the wheels or brake-rods. The other end of the lever *G* projects beyond the side of the car, and is there secured to the lower end of a lever, *D*, pivoted vertically to the side of the car and moving parallel thereto. The other end of the lever projects above the roof of the car, and is provided with a handle, by means of which it is operated.

Operation.

To couple cars with both links, motion is communicated to one or both of the cars provided with the coupling-bars *a* and *b*, as shown in fig. 1. The buffers *x* and *x* come in contact, and are swung backward, thus causing the coupling-bars to turn. The coupling-bar *b*, being shorter than the other, performs its semi-revolution in advance of the other bar, so that its link falls over and incloses the projections *g* and *d*, after which the link of the coupling-bar *a* is superposed above the link of the coupling-bar *b*, and incloses the upper portions of the projections *g* and *d*. Thus the cars are securely coupled by both links.

To couple the cars with one link, secure the side lever of either coupling-bar so that it stands fixedly in the uncoupled position. Motion is communicated to the car or cars; the buffer of the bar which is not secured comes in contact with that of the secured bar, or *vice versa*. This forces the loose coupling-bar to turn, bringing its link over both of the projections *g* and *d*, thereby coupling the cars.

To couple the cars with the side levers *D*, retract

one lever after the other. This throws the side end of the lever *D* forward, the opposite end backward, bringing the draw-rod *E* in the same direction, carrying down each link successively—one over the projections *g* and *d*, the other overlying the link first in position.

It is obvious that but one coupling-bar can be used, if desired, in a similar manner.

To uncouple the cars with the side levers, throw forward the side levers *D* successively. This retracts the side end of the lever *E*, forcing the opposite ends forward, and it, acting upon the draw-rods, retracts the lower part of the coupling-bars, and thus raises the links one after the other, thus uncoupling the cars.

The side levers *D* should be provided with pins and chains, or other suitable means of keeping them, when desired, in a fixed position.

The point at which the link comes in contact with the end of the car should be provided with a bumper.

Claims.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination and arrangement of the coupling-bars *a* and *b* with the projections *g* and *d*, for the uses and purposes substantially as herein shown and set forth.

2. The coupling-bar, fig. 5, provided with the draw-rod *E* and levers *D* and *G*, in combination with the projections *d* and *g*, arranged and operated for the uses and purposes herein shown and described.

In testimony that I claim the foregoing improvement in car-couplings, as above described, I have hereunto set my hand and seal this 17th day of August, 1870.

STEPHEN MAHURIN. [L. s.]

Witnesses:

GEO. J. RICHARDSON,
GEORGE ARROWSMITH.