(No Model.)

E. N. GIFFORD.

CAR COUPLING.

No. 267,307. Patented Nov. 7, 1882.

Fig. 1.

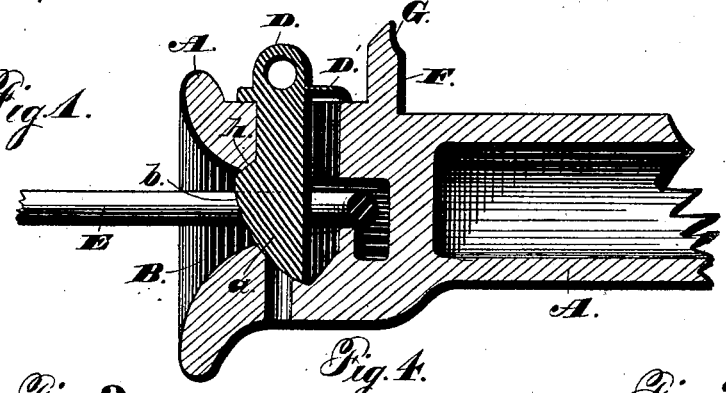


Fig. 4.

Fig. 2.

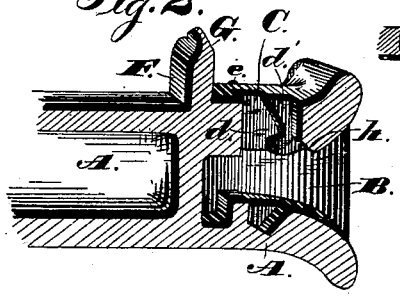


Fig. 3.

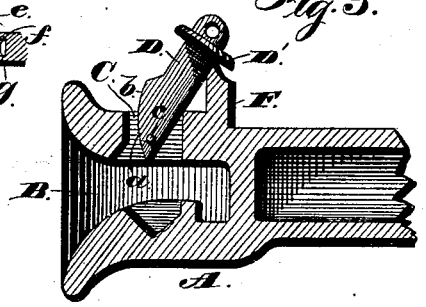
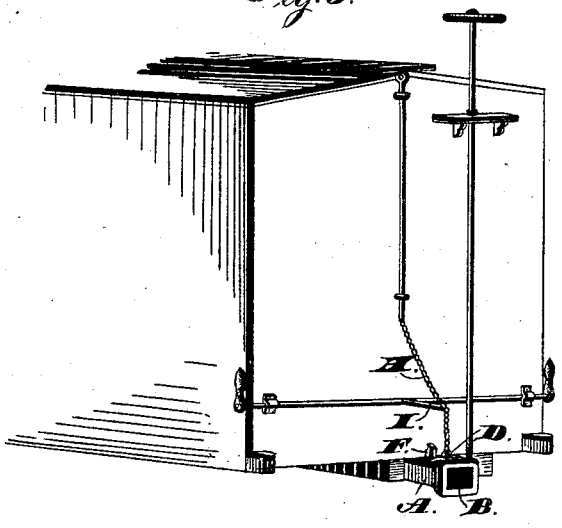


Fig. 5.



Witnesses.
Jas. E. Hutchinson.
S. G. Nottingham

Inventor.
Ezra N. Gifford
By Sargent & Sargent.
Attorneys.

UNITED STATES PATENT OFFICE.

EZRA N. GIFFORD, OF CLEVELAND, OHIO, ASSIGNOR TO HIMSELF, WILLIAM H. GIFFORD, OF SAME PLACE, AND GEORGE W. TAYLOR AND FRANCIS H. BRADY, OF LEAVITTSBURG, OHIO.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 267,307, dated November 7, 1882.

Application filed September 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, EZRA N. GIFFORD, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Car-Couplers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to car-couplers; and it consists in the parts and combination of parts, as will be hereinafter fully set forth and claimed.

In the drawings, Figures 1, 2, and 3 are views in longitudinal vertical sections of car-couplers constructed according to my invention. Fig. 4 is a detached sectional view of a portion of one side of the draw-head. Fig. 5 is a view in perspective of a box-car, showing different methods of operating the pin.

A is a draw-head, which is provided with the usual horizontal chamber, B, for the reception of one end of the link E. Passing through the upper wall of the draw-head and down vertically into the chamber B is a slot or "way," C, which extends somewhat into the lower wall of the draw-head, as shown in Figs. 1, 2, and 3. This slot or way C allows of the passage of the pin D vertically through the chamber B, and also through the opening in the link E when one end of the said link is inserted in the chamber B, as shown in Fig. 1. The forward edge or face of the pin D is formed inclined, beveled, or curved on the lower end, *a*, and is also provided with an extension, *b*, the upper face of which is slightly inclined. (See Fig. 1.) The functions of these inclines will be hereinafter fully set forth.

c is a lug or projection, formed preferably on one side only of the pin D, and in such a position that when the pin is raised and its upper end inclined backward the said pin will engage with a branch, *d'*, in a recess, *d*, formed in one side of the slot or way C, the shape of the branch of said recess *d* being such as to support the pin D by means of the said lug or projection *c* when the upper end of the pin D is thrown back, as before described; but when the draw-head receives a sudden jar or concussion, as is imparted when cars are being coupled, the lug *c* will disengage from the branch of the recess *d* and allow the pin D to fall. The recess *d* extends upward and out to the top of the draw-head to allow of the insertion of the pin D. After the pin D is inserted in the slot or way C the upper end of the recess *d* is partially closed by means of a set-screw, *e*, which passes through from the side of the draw-head, its end projecting into the recess. This set-screw, by engaging with the lug or projection *c*, prevents the withdrawal of the pin D, and hence obviates the danger of loosing or displacing said pin D. Instead of forming the female thread which engages with the set-screw *e* in the draw-head, I prefer to provide the draw-head with a slot, *f*, into which fits a steel or wrought-iron nut, *g*, which is provided with a female screw-thread adapted to engage with the set-screw *e*. (See Fig. 4.) This construction prevents the liability of the thread stripping, and, in case it (the thread) should strip, allows of the nut being easily replaced by another. The upper end of the pin D is provided with a recessed cap, D', which extends backward from the pin far enough to come in contact with the forward face of the "shoulder" F, which extends upward from the top of the draw-head in the rear of the pin D. Thus when the pin is being drawn upward or out the shoulder F and cap D' act as a guide and prevent the pin from being inclined backward, and thus binding in the slot or way C. When the pin D has been raised, as shown in Fig. 2, the incline on the upper end of the shoulder F allows the pin D to be tilted backward, so as to allow the lug *c* to engage with the branch *d'* of the recess *d*.

G is a teat, which extends upward and backward from the upper end of the shoulder F, and acts, by engaging with the recess in the cap D' of the pin D, to retain said pin in the position shown in Fig. 3, and not allow it to drop. This feature is sometimes necessary when switching cars from track to track, when it is desired that the cars remain uncoupled.

My pin may be raised or operated either by the hand or by any of the means shown in Fig. 5—viz., a chain, H, or radius-bar I.

The operation of my device is as follows, the pin D being in the position shown in Fig.

1—viz., its lower end resting in the continuation of the slot or way C, formed in the lower wall of the chamber B. This seat or continuation of the slot or way C, it will be seen, is formed with two inclines extending in opposite directions, or preferably as shown and described in a patent granted to me, dated December 22, 1874, and numbered 158,059. The object in thus forming the seat is fully described in the above-mentioned patent. The link, as it is forced into the chamber B, acts to first force the pin D back, which causes it to engage with the rear incline and rise to such a height as to allow the end of the link to engage with the incline bevel or arched face of the pin and force the said pin in a vertical direction until it (the link) has passed under the pin. The pin D now drops and the link is received. Now, when the traction is exerted against the pin D, the tendency which the beveled incline or arched lower face of the pin has to force the pin up is counteracted by the upper inclined face of the extension *b*, which engages with an inclined seat, *h*, on the upper wall of the draw-head.

The lower wall of the draw-head may, if desired, be provided with a hole, as shown in Fig. 1, whereby it will admit of the use of the common coupling-pin, if from any cause the one belonging to the draw-head should become lost or broken.

What I claim is—

1. In a car-coupling device, the combination, with a draw-head provided with a recess, *d*, and a branch recess, *d'*, of the coupling-pin D, having a pin, *c*, secured to one side thereof, substantially as set forth.

2. In a car-coupling device, the combination, with a draw-head provided with a recess, *d*, branch recess *d'*, and set-screw *c*, of the coupling-pin D, having a pin, *c*, secured to one side thereof, substantially as set forth.

3. In a car-coupling device, the combination, with a pin, of a recessed cap, said cap adapted to engage with a teat extending upward from the draw-head and support the pin, substantially as and for the purpose shown and described.

4. In a car-coupling device, the combination, with a coupling-pin, said pin being provided with a cap, of a shoulder extending upward from the draw-head, and adapted by engaging with the said cap to act as a guide for the pin, substantially as and for the purpose shown and described.

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

EZRA N. GIFFORD.

Witnesses:

EMMA WRIGHT,

W. E. DONNELLY.