2 Sheets—Sheet 1.

M. T. GREENLEAF & G. Q. ADAMS.

CAR-COUPLING.

No. 184,149. Patented Nov. 7, 1876.

FIG. 1.

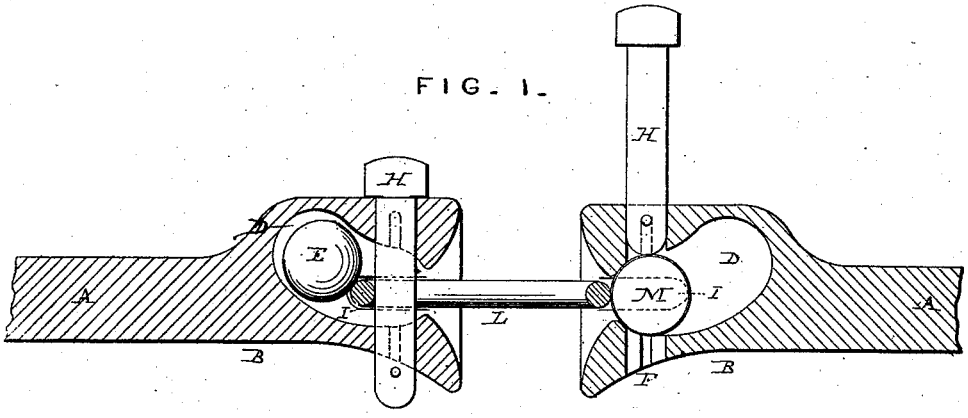
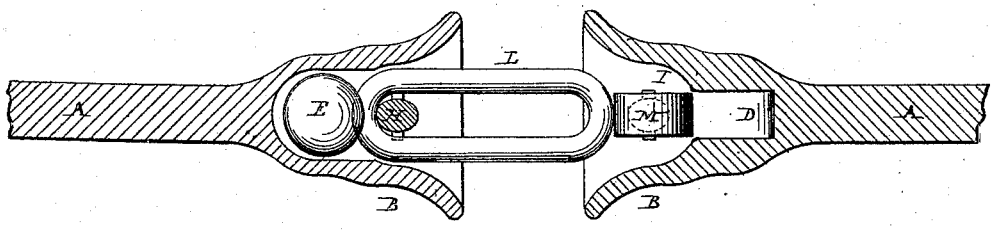


FIG. 2.



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2 Sheets—Sheet 2.

M. T. GREENLEAF & G. Q. ADAMS.

CAR-COUPLING.

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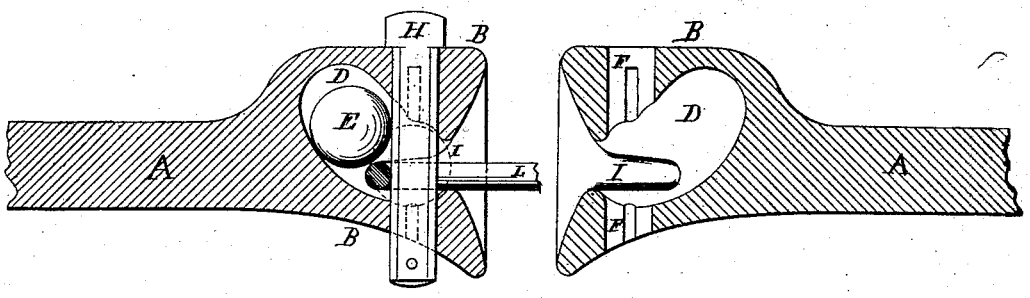
Fig. 3.



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UNITED STATES PATENT OFFICE.

MILLER T. GREENLEAF, OF QUINCY, AND GEORGE Q. ADAMS, OF WARSAW, ILLINOIS.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **184,149**, dated November 7, 1876; application filed July 8, 1874.

To all whom it may concern:

Be it known that we, MILLER T. GREENLEAF, of Quincy, Illinois, and GEORGE Q. ADAMS, of Warsaw, Illinois, have jointly invented a new and useful Improvement in Automatic Couplings for Railway-Cars; and we declare the following to be a full, clear, and exact description and specification of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section; Fig. 2, a horizontal section; and Fig. 3, a longitudinal vertical section.

Similar letters in the different drawings denote the same parts of the apparatus.

The object of this invention is to provide, for the use of railroad companies, an improved device for coupling and uncoupling cars; which device shall be, in form, substantially like the old-fashioned draw-bar, and shall use, substantially, the old-fashioned link and pin, and yet couple automatically with any car having a link-and-pin coupling, and be strong, durable, and not expensive to manufacture.

To these ends the invention consists in the construction of the draw-head, and in the combination of the other parts therewith, substantially as we will now proceed to describe.

In the drawings, A A are draw-bars, each cast whole in one piece, with the ball E cast or cored in the inclined chamber D, so that it cannot escape, by reason of the front end of the said chamber being made too small to permit the passage of the ball through it. The mouth of the draw-head is made flaring, as usual, to guide the link properly in. The hole F for the pin is made vertical, and is longer from front to rear than from side to side, or, in other words, elliptical in cross-section, in order to prevent the pin from turning. The pin H is secured to the draw-head by means of a key, *h*, in its lower end, which key is accommodated by vertical grooves *t t*, so as not to interfere with the movement of the pin up and down.

A transverse recess, I, may be cast in the walls of the chamber D, in order to stop the link from running in too far when coupling, and also to hold the link horizontal when presenting it to another car, although, by properly sloping the rear wall of chamber D, and properly proportioning the height of said chamber to the diameter of the ball, the same results may be approximately attained.

A round disk, M, may be employed instead of a ball, although the latter is generally preferable.

The casting of the draw-head whole, with the ball cored in, is effected in the following manner: A pattern is first made for the external parts of the draw-head, and a core-point is formed at the mouth of the draw-head. The core is then made in halves, containing a recess in the central part to receive the ball. The ball, ordinarily weighing about six pounds, is then placed in the recess, and the core is closed and fastened together. The pattern is then molded. After drawing the pattern from the mold the core is placed in the point, and the metal is cast around it, the core forming the chamber D and mouth of the draw-head, leaving the ball in the chamber, or, in other words, forming the draw-bar in one piece, with the ball permanently inclosed in the chamber.

As soon as the draw-bar is taken from the sand and brushed it is ready for use, as it requires no finishing, and the addition of no other parts.

Its cost is thus no greater than that of the old-fashioned cast-iron draw-bar, so long in general use, while its strength and durability are the same as those of the old-fashioned cast-iron or steel draw-bars. It couples with any link-and-pin coupling.

The ball cannot become detached, neither is the pin liable to drop out and be lost. No snow, ice, rain, or dust can lodge in the chamber D, because there is no access to the latter except through the mouth, and because the lower pin-hole affords a ready escape for all such matters, if by any chance they should enter through the mouth or through the upper pin-hole.

We claim as our invention—

A draw-head provided with the chamber

D, of the form shown and described, and having the transverse link-stop I, when the mouth of the chamber is contracted to the mouth of the link-stop, in combination with the ball E and pin L, substantially as shown and described.

In testimony that we claim the foregoing improvements in railway-car couplings, as above described, we have hereunto set our hands and seals this 1st day of July, 1874.

MILLER T. GREENLEAF. [L. S.]
GEORGE Q. ADAMS. [L. S.]

Witnesses:
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CYRUS B. ADAMS.