

E. T. HOPKINS.

CAR-COUPLING.

No. 187,854.

Patented Feb. 27, 1877.

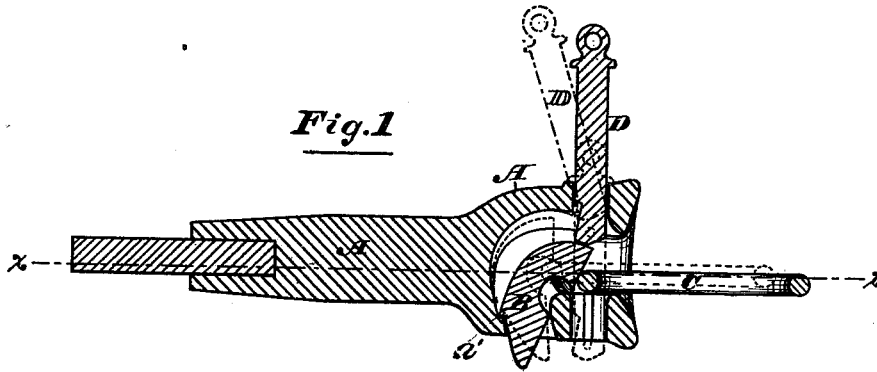


Fig. 1

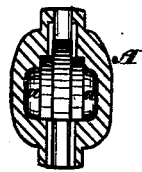


Fig. 4

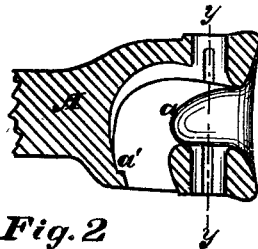


Fig. 2

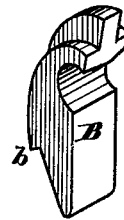


Fig. 5

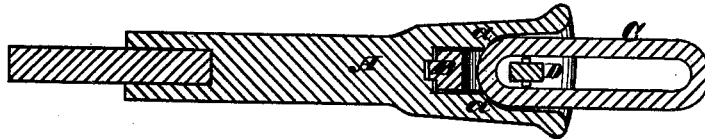


Fig. 3

Attest

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UNITED STATES PATENT OFFICE.

EDMUND T. HOPKINS, OF DAVENPORT, IOWA, ASSIGNOR TO ENOS CAR COUPLER COMPANY, OF SAME PLACE.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. 187,854, dated February 27, 1877; application filed November 2, 1876.

To all whom it may concern:

Be it known that I, EDMUND T. HOPKINS, of Davenport, in the county of Scott and the State of Iowa, have invented a new and useful Improvement in Car-Couplers, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a longitudinal vertical section of a draw-bar and head with my coupler applied; Fig. 2, a similar sectional view of the draw-head; Fig. 3, a plan sectional view taken on the line *x x*, Fig. 1; Fig. 4, a cross-section taken on the line *y y*, Fig. 2; and Fig. 5, a perspective view of the loose toggle or tumbler.

My invention relates to an improvement of the car-coupling described in Letters Patent No. 150,309, granted to Joab Enos, April 28, 1874.

In the coupling described in said Letters Patent the toggle or tumbler extends entirely across the recess in the draw-head, and consequently receives the whole shock when the link is driven back against the toggle in the act of coupling. Unless the back of the toggle is accurately fitted to the rear face of the recess in the draw-head, this shock, especially if severe, will sometimes break the toggle. The object of my invention is to overcome this difficulty by relieving the toggle from the shock.

The invention consists in contracting the rear portion of the recess in the draw-head, and making the toggle of a width to correspond therewith, so that it will fall back into the contracted recess, while the link will be stopped by the enlargements or cheeks on the interior side faces of the draw-head; and it also consists in supporting the toggle at its rear side by means of a step or shoulder in the draw-head, at the extreme rear end of the recess, on which a projection on the back side of the toggle rests, as will be hereinafter more fully set forth.

In the drawings, A represents a draw-head, which is constructed with the ordinary flaring mouth, and is provided with a recess or chamber similar in its general construction to that shown in Letters Patent No. 150,309. The

sides of the draw-head are somewhat thicker at the rear portion of the recess, however, than at the front—that is to say, they are cut away more at the front than at the rear—so that projections or cheeks *a* will be produced on the interior faces of the draw-head at the sides of the recess, as shown in Figs. 3 and 4 of the drawings. This construction makes the rear portion of the recess considerably narrower than the front portion thereof, as is clearly shown in Fig. 3 of the drawings. The tumbler B is, in its general shape, like the tumbler shown and described in the Enos patent referred to above, and is made to operate in a similar manner. The flanges or arms at the side of the Enos toggle are dispensed with, however, and the main body thereof is made sufficiently narrow to be received into the narrow portion of the recess or chamber in the draw-head. At the lower end of the toggle the rear side thereof is cut away slightly, so as to make a slight shoulder or rabbet, *b*, as shown in Fig. 5 of the drawings. The draw-head, instead of having shoulders at the sides of the recess for the support of the toggle, as in the Enos patent, is constructed with one at the rear of the recess, as shown at *a'* in Figs. 1 and 2 of the drawings. On this shoulder *a'* the corresponding shoulder *b* of the tumbler rests, thereby supporting the latter loosely within the recess. The tumbler B is not attached to the draw-head, but vibrates back and forth freely on the shoulder *a'* as a bearing. It is thrust into position in the recess through the open mouth of the draw-head, and can be readily removed at pleasure. The lower side of the draw-head is provided with a hole to receive the lower end of the tumbler, which is made slightly tapering, but the hole is not large enough to permit the tumbler to slip through below the rabbet *b*. The front portion of the recess in the draw-head is wide enough to receive the link C; but the rear portion is narrower than said link, so that the latter can be forced back only to the cheeks *a*, as shown in Fig. 3 of the drawings. The tumbler is constructed with a weighted and hooked upper end, which swings forward to catch and hold the link in place, the same as in Letters Patent No. 150,309. When in this position the

coupling-pin D rests upon the upper end of the tumbler, as shown in Fig. 1 of the drawings.

The tumbler and coupling-pin being in position shown in Fig. 1 of the drawings, when the coupling-link C on another car is driven into the mouth of the draw-head it strikes the upper end of the tumbler B, and forces it back until the pin D is released and falls down through the link. The link will ordinarily be carried back as far as the recess will permit, and frequently with considerable force. Its backward movement will be stopped, however, by the cheeks *a*, while the tumbler will fall back into the rear portion of the recess, as shown in dotted lines in Fig. 1 of the drawings. This contracted recess is a little deeper than the thickness of the tumbler, so that the latter may fall entirely away from the link as it is driven backward, as shown in Fig. 3 of the drawings. The tumbler will thus be relieved from all shock, and the danger of breakage entirely removed. The link for coupling is held in a horizontal position in one of the draw-heads by the weight of the upper end of the tumbler, which hooks over it, and thus the coupler is made automatic in its operation.

The tumbler B, being supported loosely within the recess in the draw-head, is free to rise and fall, as well as vibrate back and forth, and therefore the link has great latitude of adjustment, enabling the coupling to operate successfully.

The draw-bar herein described and shown may be made of cast-iron, or, by using suitable dies, it may be constructed from wrought-iron, if desired.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The draw-head A, recessed as described, and constructed with side cheeks or projections *a* and shoulder *a'* at the rear of the recess, in combination with the loose tumbler B, provided with a rabbet or shoulder, *b*, upon its back, substantially as and for the purpose set forth.

E. T. HOPKINS.

Witnesses:

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