M. LOGAN.
Car-Coupling.

No. 206,462. Patented July 30, 1878.

Fig. 1.

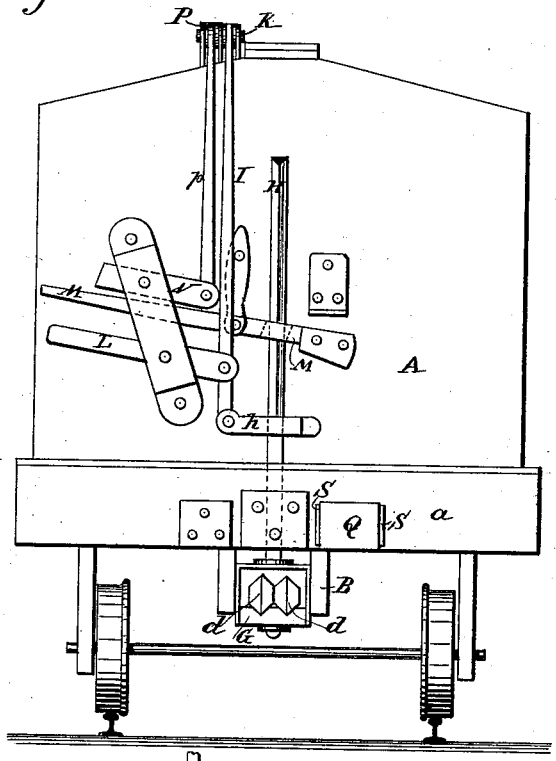



Fig. 2.

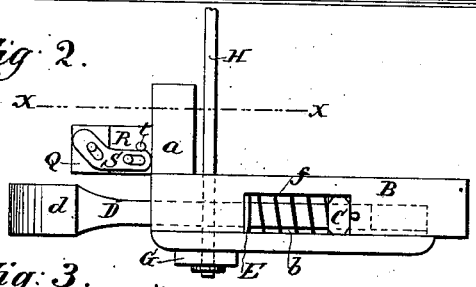



Fig. 3.

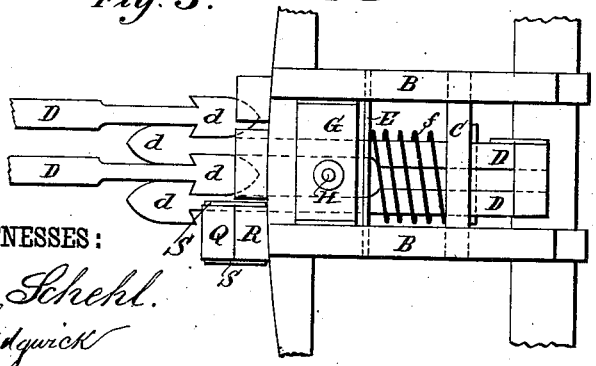
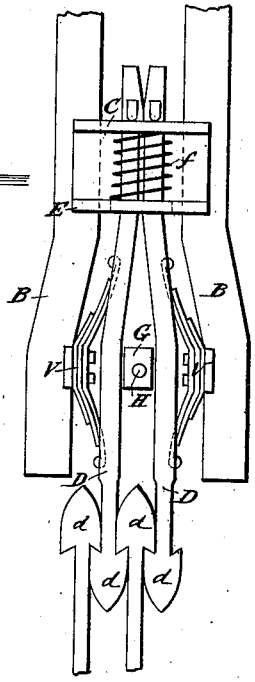



Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **206,162**, dated July 30, 1878; application filed June 18, 1878.

*To all whom it may concern:*

Be it known that I, MILTON LOGAN, of Foxburg, in the county of Clarion and State of Pennsylvania, have invented a new and useful Improvement in Car-Couplings, of which the following is a specification:

My invention consists in a novel arrangement and combination of hook-headed draw-bars and levers for operating the same, whereby provision is made for coupling and uncoupling the cars by raising and lowering said draw-bars; and the invention consists, further, in a novel construction of an extension-buffer, to be used when necessary, and to be placed out of the way when not in use.

In the accompanying drawing, Figure 1 represents an end view of a car with my invention attached. Fig. 2 is a side view of the coupling and of the extension-buffer. Fig. 3 is a bottom view, and Fig. 4 a detail view.

Similar letters of reference indicate corresponding parts.

A represents a railway-car of any ordinary construction, and *a* the platform thereof. To the under side of the platform is attached the draw-head B, in which the draw-bars are carried. The draw-bars D D are provided with hooked or shouldered heads *d d* at their outer ends, and their inner ends are attached together side by side. The portion of each bar between its ends receives pressure from a semi-elliptical spring, V, as shown in Fig. 4, so that when the rear ends are attached together the front ends may be separated, but will spring together again when released.

In the sides of the draw-head are two slots, *b*, opposite to each other, and these slots receive the ends of a bar, C, to which the rear ends of the draw-bars D are attached. The bar C occupies the rear portions of said slots *b*, and the front portions thereof receive the ends of a plate, E, in the center of which is an opening through which the draw-bars pass. Surrounding the draw-bars is a spring, *f*, one end of which bears against the bar C and the other end against the plate E. This arrangement allows the draw-bars to have an elastic longitudinal motion in the draw-head, and lessens the sudden shock given to the car when it first starts.

The bar C works freely in the slots *b*, so that it may move back and forward therein, and also in order to allow the draw-bars to oscillate vertically with said bar as a center.

In the front portion of the draw-head B is a block, G, arranged to work freely in a vertical direction, and having a central opening through which the draw-bars pass. To this block is attached the lower end of a rod, H, which passes upward through the platform *a* and extends vertically in front of the car A.

To the rod H, just above the platform, is secured an arm, *h*, and to this arm is pivoted the lower end of a rod, I, which extends upward as far as the top of the car, and has its upper end pivoted to the short arm of a lever, K, having its fulcrum on a standard or pedestal on the roof of the car. Another lever, L, is pivoted to the connecting-rod I nearer the platform, and has its fulcrum in a frame attached to the end of a car. By means of these levers, connected with the rod I, as described, the draw-bars may be raised or lowered, either from the roof by the lever K or from the platform by the lever L.

The rod H is made angular in its cross-section, as is shown in Fig. 1, and may be provided with ratchet-teeth or serrations on its edges or corners, and its upper portion passes through a hole of corresponding shape in the short arm of a lever, M, having its fulcrum attached to the end of the car, so as to be operated from the platform. The short arm of this lever is weighted so as to render it much heavier than the long arm.

When the draw-bars are raised by means of the lever K or lever L, the rod H, as it rises, passes freely through the opening in the weighted arm of the lever M, which rises slightly to allow the rod to pass; but as soon as said rod is released by the lever K or L the tendency of the draw-bars to descend again, together with the friction of the rod H in the hole in the weighted lever M, will cause a biting or binding action on the rod H, checking its downward movement and holding the draw-bars at the exact height occupied by them when released. By this means the draw-bars of one car may be made to engage with those of corresponding construction on other cars having platforms of different heights.

In order to facilitate the handling of the

weighted lever M from the top of the car, a lever, P, is arranged with its fulcrum on the roof, and with its short arm connected by a rod, *p*, with a short lever, N, pivoted above the long arm of the lever M, so that when the long arm of the lever P is depressed the short arm of the lever N will depress the long arm of the lever M.

When the draw-bars are at their highest position, and so held by the biting or binding action of the weighted lever on the rod H, by depressing the long arm of the lever M so as to slightly raise the weighted short arm, the rod H is released, and the draw-bars drop of their own weight.

In coupling two cars provided with my invention the draw-bars of one car engage with those of the other by the head of one of the bars on each car being clamped between and held by the bars on the other car. In uncoupling them, the bars on one car are raised or lowered, as the case may require, so as to disengage them from those on the other car.

The extension-buffer is made in two parts, Q R, connected together by two straps, S S, one on each side. Each strap is slotted near each end, and through these slots pins pass into the parts Q R, as shown in Fig. 2. When the extension-buffer is to be used (as in case of the contiguous car having too long a draw-head) the part Q is placed in front of the part R, where it is held in place and prevented from descending too far by the engagement of the straps S with pins or projections *t*, as shown in Fig. 2. When not in use the part Q is placed on the top of the part R, or may be allowed to hang down under it.

This coupling may be arranged to be used on one car in connection with an ordinary link-and-pin coupling, or another car, in which case the extension-buffer may be employed.

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

1. The combination, with the draw-bars D and block G, arranged as described, of the rod H and weighted lever M, having the opening for engagement with said lever, substantially as and for the purpose specified.

2. The combination, with the rod H, block G, and draw-bars D, of the arm *h*, connecting-rod I, and levers K L, as shown and described, for the purpose specified.

3. The combination, with the weighted lever M, of the short lever N, connecting-rod *p*, and lever P, as shown and described, for the purpose specified.

4. The combination, with the platform *a*, of the extension-buffer, composed of the parts Q R and connecting-straps S S, as shown and described, for the purpose specified.

MILTON LOGAN.

Witnesses:
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