J. B. VEDDER.

Improvement in Car-Couplings.

No. 115,394. Patented May 30, 1871.

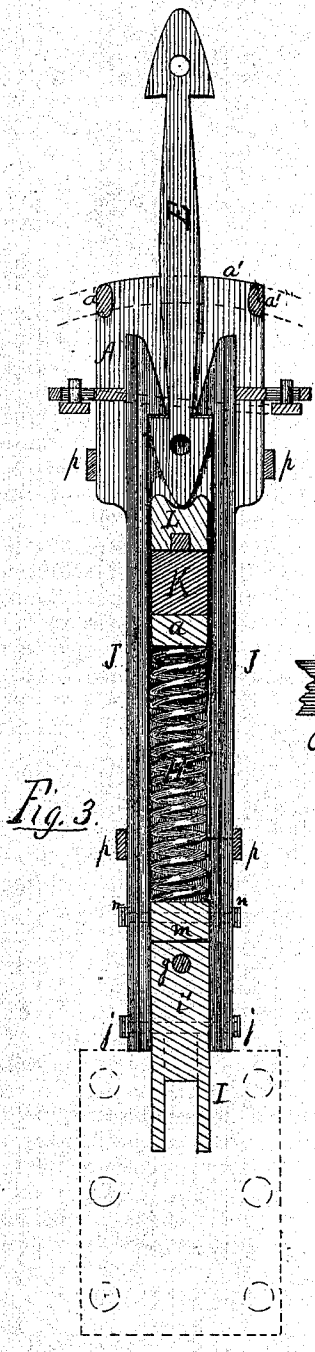

Fig. 3.

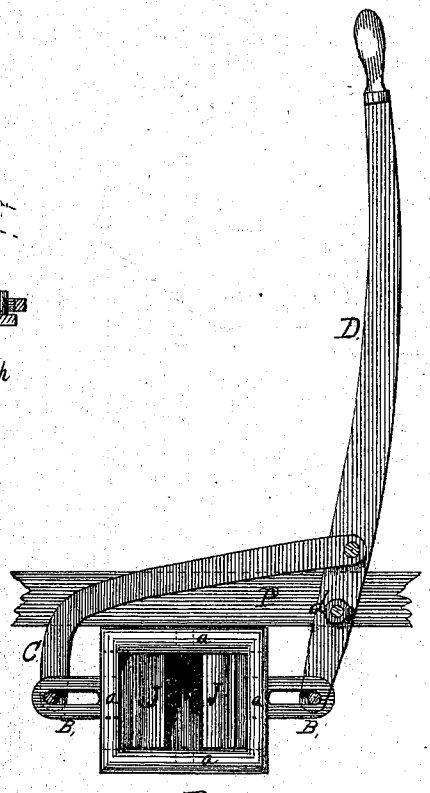

Fig. 1.

Fig. 2.

Witnesses.

C. D. Kellum

Thomas F. Riley

Inventor.

James B. Vedder

UNITED STATES PATENT OFFICE.

JEROME B. VEDDER, OF GLOVERSVILLE, NEW YORK.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. 115,394, dated May 30, 1871.

To all whom it may concern:

Be it known that I, JEROME B. VEDDER, of Gloversville, in Rensselaer county and State of New York, have invented an Improved Car-Coupling; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is an end view of the draw-head, showing the double-acting lever attached; Fig. 2 is a longitudinal vertical section; and Fig. 3 is a horizontal section.

Similar letters of reference in the accompanying drawing indicate corresponding parts.

This invention, which is an improvement upon one secured to me by Letters Patent of the United States dated January 11, 1870, No. 98,723, consists in the construction and connection of the parts constituting the draw-head and coupling, as hereinafter set forth.

In the drawing, A represents the draw-head, consisting of two flat horizontal parallel plates, A′ A′, of similar shape and equal size, united near their middle by a block, *a*, and at their front end by a square casting, *a′*, which forms the face of the draw-head; the whole being cast in one piece, and attached to the platform P by means of metallic straps *p p*, which permit the part A to slide longitudinally to a limited extent. I is a casting fixed to the under side of the platform, behind the sliding part A, and constructed in the form of a flat plate, *i*, supporting a projecting block, *i′*, which extends between the rear ends of the two plates A′ A′, keeping them properly apart, and forming ways or bearings, upon which they slide. It also serves to support two flat spring-jaws, J J, which, in connection with an arrow-head link or bar, E, constitute the coupling that connects the cars. The jaws, each of which may be composed of one or more spring-plates, lie between the plates A′ A′, forming, as it were, the side of the draw-head. They are connected to the block *i′* by means of bolts *j* passing through it in slots, which permit them to slide longitudinally. They are also connected by bolts *n* to a sliding block, *m*, which lies between them just in front of the block *i′*. A fixed pin or bolt, *g*, extends vertically through the block *i′* and through slots in the plates A′ A′, so as to guide and hold the latter, but not interfere with the longitudinal sliding movement of the draw-head. Between the blocks *a m* extends a spiral spring, H. A rubber spring, K, is placed in front of the block F; and in front of the rubber spring is a metallic block, L, having an indentation in its face to adapt it to the form of the coupling-link or bar E. For the purpose of opening the jaws J J when necessary I employ a double-acting lever, D, pivoted to the platform at *d*, said lever being connected directly to one jaw by means of a pin on its lower end below the fulcrum, and a slotted lug, B, cast on the jaw, and to the other jaw by means of an arm, C, articulated to the lever above the fulcrum, and likewise attached to the jaw by a pin and slotted lug, so that a throw of the lever opens or closes both jaws at once.

I am aware that double-acting toggle-joint levers have been heretofore used for a similar purpose; but my lever differs from them in the fact that its fulcrum is fixed, while theirs is movable—a difference apparently slight, but really of the greatest importance.

With a lever having a movable fulcrum the spring-jaws must be constructed with the greatest care so as to be of equal rigidity, for if one springs more easily than the other they will open unequally, the stiff spring scarcely bending at all, while the limber one springs outward more than is necessary. The result often is that the stiff spring will not yield sufficiently to disengage the head of the coupling-bar and the cars will not uncouple. By fixing the fulcrum, on the contrary, both jaws have a positive and equal movement, and must always disengage the link or bar when the lever is properly moved.

The lugs B B are slotted for a double purpose—namely, to allow the jaws to spring apart and couple automatically when cars come together; and, secondly, to keep the swaying of the cars from incessantly moving the handle of the lever while the train is in motion. The pins which extend from the lever through the slotted lugs, it will be observed, are considerably elongated—a construction which is necessary, inasmuch as the lever itself is fixed to the platform, while the lugs slide back and forth with the jaws and the

draw-head, and would become disengaged from the pins were the latter not made of considerable length.

The operation of the parts which constitute the coupling is as follows: On coming together the cars couple automatically in the usual manner with couplings of this class. If the draw-heads strike together each slides back longitudinally in its bearings, causing the solid part *a* to compress the spiral spring H against the seat *m* until the resistance of the spring counteracts their force, thereby preventing any sudden and uncomfortable shock. If the draw-heads do not come in contact in consequence of the coupling-bar being too long to allow them to meet, then the bar itself, striking the block L, compresses the rubber spring K against the seat *a*, taking up a part of the force, the residue being applied to the seat *a*, and having the effect to force it and its connected plates A′ A′ back so as to compress the spring H, and thus wholly prevent concussion, as above described. It will be observed that when the draw-head is thus forced back the jaws J J are not moved, they being connected not to the draw-head but to the part I, which is fixed to the platform. In starting the cars there would be also an uncomfortable jar as the slack is taken up were not some provision made to counteract it. My improved coupling is adapted especially to this purpose. When the coupling-bar is suddenly drawn forward, so as to strike violently against the shoulders of the spring-plates J J, the latter yield for a moment, and, sliding forward, cause the block *m* to compress the spring H against the seat *a*, completely overcoming the violence of the shock and giving the car an easy start.

I am aware that double-acting springs have heretofore been used to overcome the shock of cars coming together and starting; and I do not claim, broadly, the use of a spring so operating, but only the improved construction and arrangement of the parts as described in the device which I wish to cover and protect by Letters Patent, being—

The car-coupling herein described, consisting of the sliding plates A′ A′, connected at *a a*, the fixed casting I, the spring-jaws J J, the movable blocks *m* L, the springs H K, and the coupling-bar or link E, all constructed, arranged, and connected substantially as described and shown.

In testimony whereof I have hereunto set my hand this 21st day of March, 1871.

JEROME B. VEDDER.

Witnesses:
L. P. JOHNSON,
A. J. PALMER.