

E. P. HOWLAND.

Car Coupling.

No. 47,108.

Patented Apr. 4, 1865.

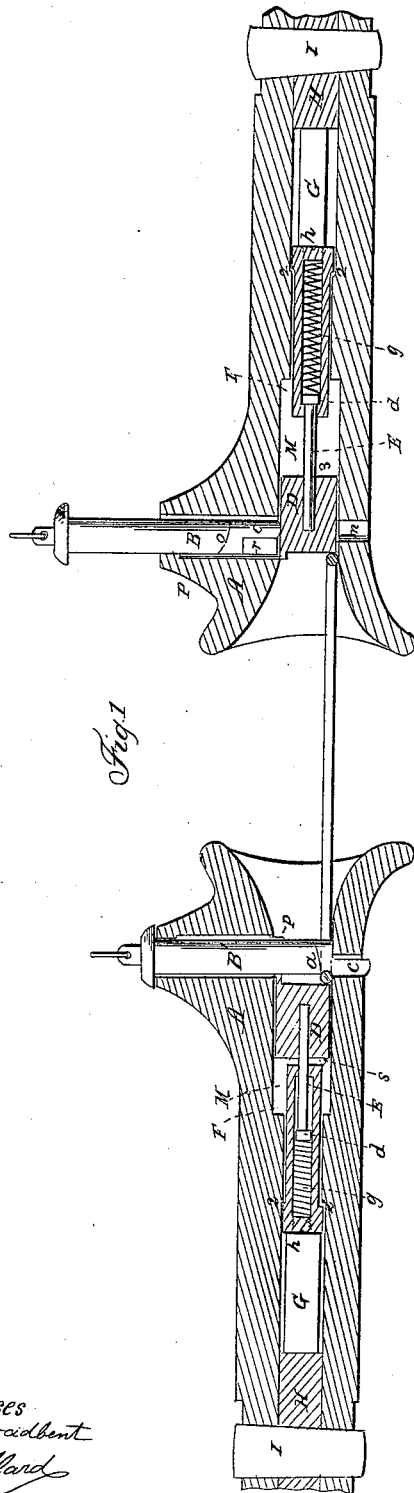


Fig. 1

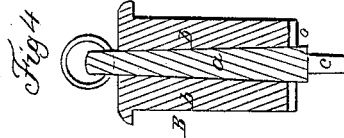


Fig. 4

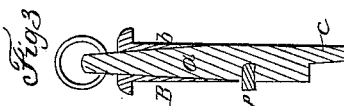


Fig. 3

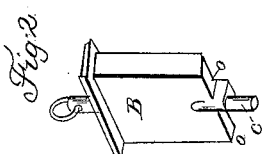


Fig. 2

Witnesses
James Boardman
Thomas Pollard

Inventor
Edward P. Howland
By his Attorney
Thomas H. Dodge

UNITED STATES PATENT OFFICE.

EDWARD P. HOWLAND, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN CAR-COUPLING.

Specification forming part of Letters Patent No. 47,108, dated April 4, 1865.

To all whom it may concern:

Be it known that I, EDWARD P. HOWLAND, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Car-Couplings; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 represents a longitudinal vertical section through said car-coupling. Figs. 2, 3, 4 represent detached views of the drop-bar acting as a coupling bolt for locking the coupling-link.

My invention consists in certain improvements on my car-coupling patented on the 15th of September, 1863, and relates to the peculiar construction of my drop-bar or weighted coupling-bolt and to the arrangement of certain springs by which the slide-block is operated which supports the drop-bar previous to applying the coupling-link.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents the draw-heads of two cars. They may be of the usual form, and each draw-head has a rectangular drop-bar or weighted coupling-bolt, B, fitted vertically in it, which is allowed to slide freely up and down. It is necessary for the proper operation of said slide-bar, as hereinafter described, that it should have a certain weight, and to effect this I cast the metal *b* around the central wrought-iron bolt, *a*, and I thus give to the drop-bar the desired weight and shape. By making the central bolt of wrought-iron the pin *c*, at the lower end, to which the coupling-link is connected, is able to withstand the wear and pressure to which it is subjected, while the metal cast around it imparts to it the weight necessary to its proper operation.

In each draw-head is a slide, D, to which a rod, E, is secured. These rods extend within boxes F in the draw-heads, and their inner ends are provided with heads *d*, which press upon the spiral springs *g*, the latter having the tendency of pressing the slides D outward. The boxes F have square heads *h*, which rest against the shoulders 2 of the draw-heads, and said boxes are pressed outward by the action of the india-rubber springs

G, whose inner ends bear against the draw-bars H, which are secured to the draw-heads by means of the wedges I.

When the drop-bars B are raised, the springs *g* will keep the slides D forced outward underneath the bars B, so as to keep them in an elevated position, as shown in one of the draw-heads in Fig. 1.

When the link J is shoved into one of the draw-heads, the slide D thereof is forced back as the spring *g* yields to the pressure, and the bar B is thus set free and drops upon and locks the link J, the pin *c* passing through the link and into the recess *m*. The rod E, being thus forced back, overcomes the tension of the spiral spring *g*, which, being considerably weaker than the india-rubber spring G, the latter is not acted upon to any extent.

The link J is held in its horizontal position by the pressure upon it of the shoulder *o* of the drop-bar B, (represented in Fig. 2,) and when the empty draw-head approaches the one containing the link the other will be in line with the former, and the slide D of the empty draw-head will be forced back, and the bar B will be released and will drop and lock the link J, as above described.

When the cars crowd each other or are run against each other while coupled, the link J will force the slides D inward, so as to bring their rear sides, 3, in contact with the boxes F, and if the pressure continues it will be directly upon the india-rubber springs G, which then serve as buffers or cushions to receive and neutralize the shock caused by the cars on each other.

In uncoupling the link J the raising of the drop-bar B releases the slide D, and the spring *g* acts upon the slide D and forces it out together with the link, which latter is thus automatically released from the coupling-bolt.

The drop-bar B is provided with a pin or screw, *p*, which slides in a groove, *r*, of the draw-head, to prevent the bar B from being pulled out of the draw-head when it is raised.

The interior of the draw-head A is constructed with suitable cavities for the reception and operation of the parts D, F, G, H. The cavity M, in which the slide D operates, is rectangular. The cavity within which the box F rests is cylindrical up to the shoulders 2, and thence square up to the draw-bar I, which is square also.

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

The drop-bar B, made in the shape substantially as herein described, having a pin, *c*, and shoulder, *o*, near its lower end, and when part of the same is made of wrought-iron with metal

cast around it, substantially as and for the purposes set forth.

EDWARD P. HOWLAND.

Witnesses:

THOS. H. DODGE,
STEPHEN P. TWISS.