

W. H. LANGLEY, E. P. RALPH & J. HANNAN.

CAR-COUPLING.

No. 176,649.

Patented April 25, 1876.

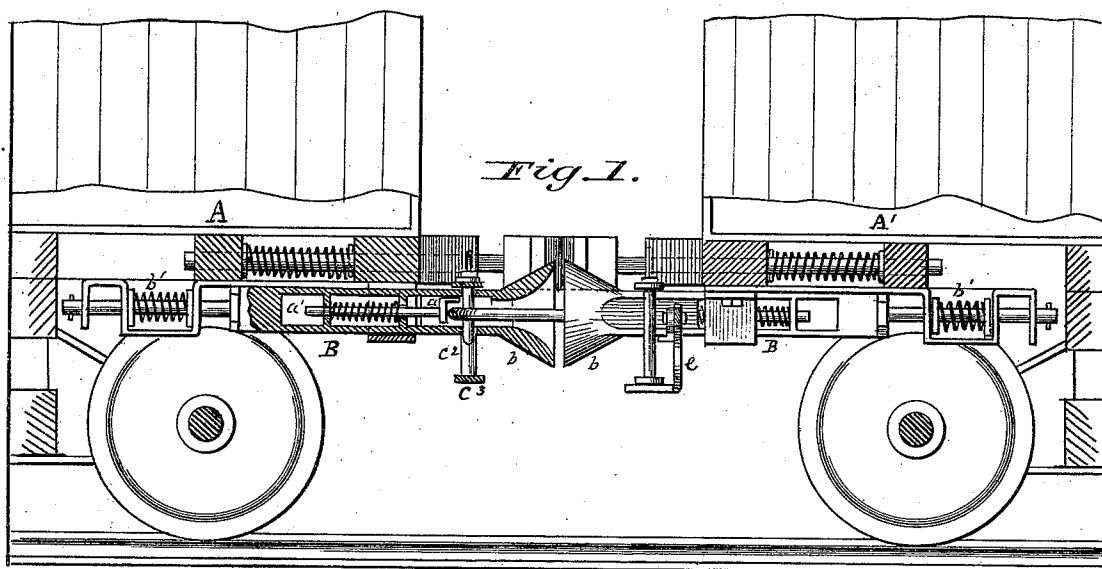


Fig. 1.

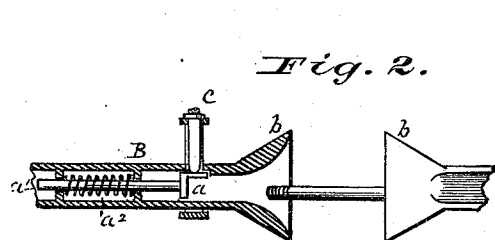


Fig. 2.

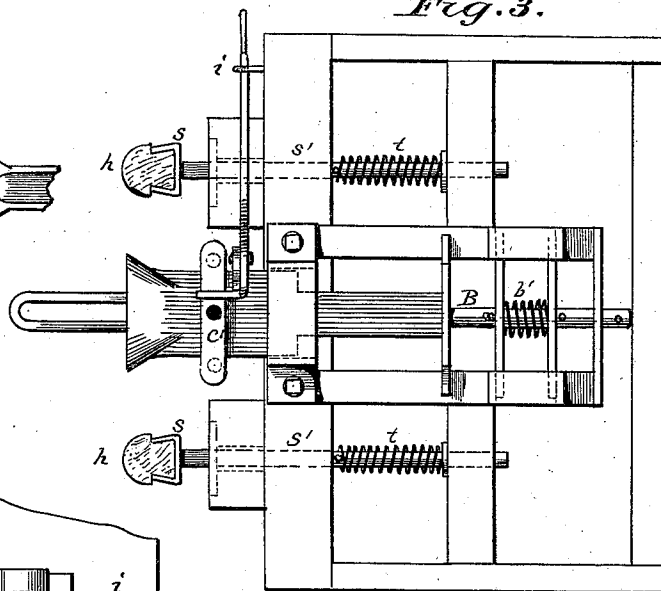


Fig. 3.

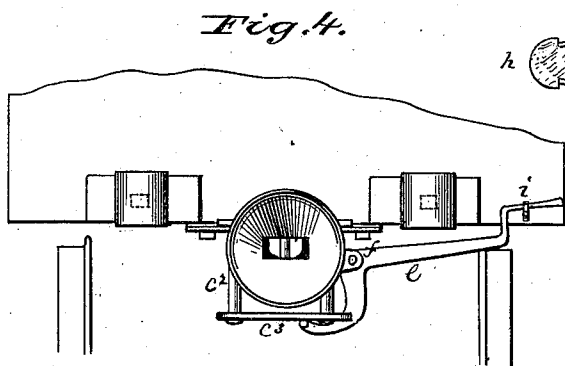


Fig. 4.

Attest:
H. L. Perine
J. L. Brown

Inventors:
William H. Langley
Ellery P. Ralph,
James Hannan,
By J. J. Gomb, Attorney

UNITED STATES PATENT OFFICE.

WILLIAM H. LANGLEY, ELLERY P. RALPH, AND JAMES HANNAN, OF
GALLIPOLIS, OHIO.

IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. **176,649**, dated April 25, 1876; application filed
March 22, 1876.

To all whom it may concern:

Be it known that we, WILLIAM HENRY LANGLEY, ELLERY PERRY RALPH, and JAMES HANNAN, of Gallipolis, in the county of Gallia and State of Ohio, have invented a new and useful Improvement in Railroad-Car Coupling, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

The object of this invention is to provide an efficient and reliable automatic coupling, not liable to injury from the concussion of the cars in coming together, and which may be uncoupled, as well as coupled, without inserting the hand between the cars.

In the accompanying drawings, Figure 1 is a side view of two cars, A and A', coupled together by our coupling mechanism, A being a longitudinal vertical section, and A' showing some of the parts cut away to exhibit the coupling mechanism. Fig. 2 represents the two draw-heads in the act of coming together, one of which is shown in longitudinal vertical section. Fig. 3 is a bottom view of a section of a car to which our coupling mechanism is applied, and Fig. 4 is an end view of the same.

B B are the draw-bars, each having a funnel-shaped head, *b b*. In the cavity between the upper and lower plates of each draw-bar there is a movable block, *a*, of L form in cross-section, attached to the end of a sliding rod, *a'*, encircled by a spiral spring, *a''*. This spring, when free, forces and holds the block *a* so far forward that the upper portion of it will cover and close the hole in the upper plate of the draw-bar, through which the coupling-pin passes, serving as a shelf on which the point of said coupling-pin rests. The draw-bars are each provided with a yielding spring, *b' b'*, to soften the concussion when the cars come together. The coupling-pin *c* is secured to and rides in a sliding frame or gate, *c'*, embracing the draw-bar, the side rods of which, *c''*, move in grooves or recesses on each side of the draw-bar, to insure the raising and lowering of the pin in a true ver-

tical line. The lower cross-bar of this gate *c''* is so arranged that it will only permit the gate to be raised just so far that the coupling-pin will clear the shelf of the block *a* without leaving its socket. Hence, the pin will always be in position to drop down through the draw-bar when the shelf *a* is removed from under it.

When the cars come together the free end of the coupling-link will force back the block *a* until its shelf passes from under the coupling-pin, when the pin will instantly fall, by its own weight and that of the gate to which it is attached, down through the link and into its socket in the lower plate of the draw-bar, thus completing the coupling.

To uncouple the cars, we provide a lever, *e*, of peculiar form, having its fulcrum *f* on one side of the draw-head, and its shorter limb bent down under the gate *c'*, so that it will bear against the lower cross-bar *c''* thereof, and its longer limb extending out to the outer edge of the car-frame, where there is a projecting stud-pin, *i*, to support it while the cars are coupled. To uncouple the cars, this longer arm of the lever is released from the pin *i* by slightly pushing it outward, and is then pressed down until its opposite end raises the gate, so that the coupling-pin will pass the shelf *a*, which is then instantly thrown forward by its spring under the point of the coupling-pin.

To prevent injury to the draw-heads, as well as to the cars themselves, from violent concussions when the cars come together, we unite with our coupling devices buffers *h h*, consisting of blocks of wood, rubber, or other suitable material, secured in iron shoes *s s*, attached to sliding rods *s' s'*, with strong spiral springs *t t* around them. These buffers are so arranged upon the cars that they will meet whenever the cars come together with violence, and will thus soften the concussion, preventing the mashing of the draw-heads, as well as injury to the cars themselves.

Wherever spiral springs are described and shown, it is manifest that springs of other

forms may be substituted as the mere equivalents thereof.

What we claim as our invention, and desire to secure by Letters Patent, is—

The combination of the draw-bar, the sliding block *a*, with its spring *a*², the gate *c*¹, carrying the coupling-pin, and lever *e*, for raising the gate and coupling-pin, all con-

structed, combined, and arranged to operate substantially as described.

WILLIAM HENRY LANGLEY.

ELLERY PERRY RALPH.

JAMES HANNAN.

Witnesses:

S. Z. CADOR,

C. W. WHITE.