

D. W. VOWLES.
CAR-COUPLING.

No. 171,889.

Patented Jan. 4, 1876.

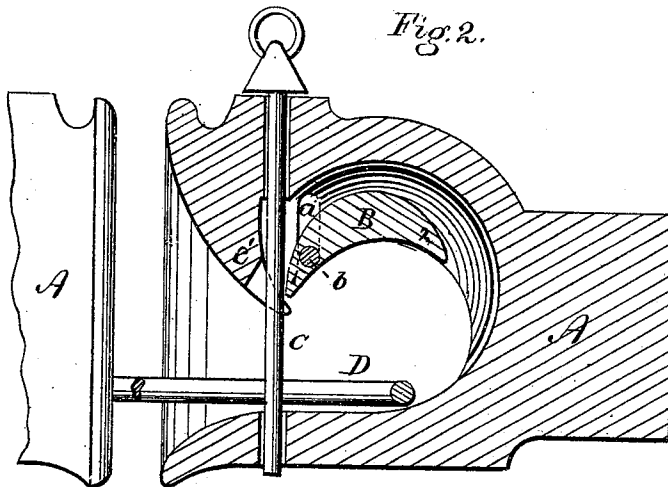
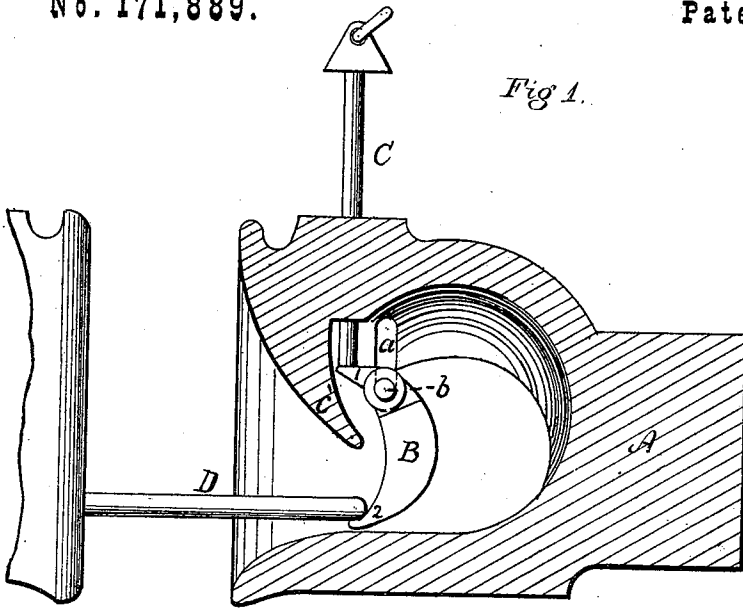
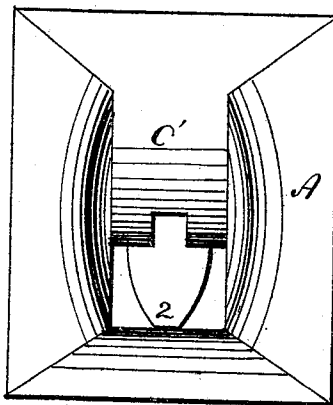


Fig. 3.



Witnesses
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Inventor
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UNITED STATES PATENT OFFICE

DANIEL W. VOWLES, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR
OF ONE-HALF HIS RIGHT TO WILLIAM H. LARNER, OF SAME PLACE.

IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. **171,889**, dated January 4, 1876; application filed
November 27, 1875.

To all whom it may concern:

Be it known that I, DANIEL W. VOWLES, of the city of Washington, District of Columbia, have invented a new and useful Improvement in Car-Couplers; and I do hereby declare that the following is a full, clear, and exact description of the same, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings and to this specification.

The nature of my invention consists in constructing and arranging within a hollow dome of a draw-head an automatic trip, which shall permit the coupling-pin to fall when struck by the coupling-link, and so hold the link from being withdrawn by passing vertically through its opening.

The invention consists more particularly in the construction of the gravitating-trip, and the manner in which it operates to suspend the coupling-pin at all times when required, as will be hereinafter more fully set forth.

Like letters in the various figures upon the drawings indicate like parts.

Figure 1 is a vertical central section of my device, showing the coupling-pin as set for being automatically dropped. Fig. 2 is a view of the same after the pin has fallen and entered the opening in the link, and the trip B in its receptacle forming a portion of the upper part of the arch or roof of the dome. Fig. 3 is a front view of my device before the link has entered it, showing the construction of the trip B.

A designates the solid draw-head, having flaring and open front, and hollowed out to form a semicircular chamber or partial dome, in which the trip plays. Formed in the two sides of the draw-head are vertical slots *a*, in which rests and works a pivotal pin, *b*, to which the tilting trip B is secured centrally and within the draw-head. The pivot-pin *b* is free to rise or fall, and also to turn in the slot *a*, thus permitting the trip to turn and rise and fall, as occasion may require. The trip B, as shown in Figs. 1 and 2, is somewhat crescent-shaped in cross-section, having the lower end 2 heavier and thicker from front to rear than the upper end 1, so that by gravity the lower end 2 will overcome the upper end

1, when the trip is free to fall or turn. The pivot *b* is secured to the trip B, or passes through it near the upper end 1, making the same a short arm or lever overbalanced by the lower end 2. Looking at the trip from the front, as in Fig. 3, its point or lower end 2 is contracted and projects forward, and is narrow in its opposite diameter. This is quite important, as when the pin C is withdrawn from its position, as shown in Fig. 2, the lower end 2 of the trip falls within the opening of the link, and, passing forward or outward, takes the position as shown in Fig. 1. Cars are often required to be uncoupled when the draw-heads are jammed together, and the link D resting or pressing against the back or arch of the dome, the peculiar form of the lower end of the trip will allow it to pass free and easily in the opening of the link, and assume the position as shown in Fig. 1, when the coupling-pin is withdrawn. When the draw-heads are apart and the link drawing on the coupling-pin C, the weight and fall of the trip against the link will drive it forward from its position in the mouth or hollow of the draw-head when pin C is withdrawn. When the pin is set as in Fig. 1, and the trip B is within the hollow of the link D, the inclined or convex rear side of the trip will allow the link to be drawn out without disturbing or displacing the position of the pin C. The link, while passing the inclined rear side of the trip, causes the trip to rise by means of its pivot-pin *b* in slots *a*, and the act of uncoupling completed, the trip and pin falling into the position as shown in Fig. 1. C is a coupling-pin, slightly tapering in size from head to point, (or the usual coupling-pin,) which, when in its position as set for automatically entering the link, rests upon the short arm or lever 1 of the upper end of the trip B, as shown in Fig. 1, in which position the trip hangs pendent upon its pivot, the short lever or arm having its upper surface horizontal or slightly inclined, and the coupling-pin resting perpendicular, with its lower end upon the arm. The weight of the eccentrically-hung trip is sufficient to suspend and hold the coupling-pin upright under all circumstances, save when struck or carried back by the entering link. The draw-

head has a suitable vertical passage or hole for the pin C, also a flaring mouth. The upper part of the mouth or lip *c'*, projecting downwardly and inwardly, assists in directing the link into it when the draw-heads are brought together. The upper lip or upper part of the mouth *c'* of the draw-head has a slot or bifurcation in its lower end, through which the pin C passes in ascending and descending. This bifurcated lip of the draw-head holds the pin from being bent or broken by the strain upon it, or being bent out of position laterally; also prevents the trip B from being drawn forward by the link D when the trip is in the hollow of the link.

My device is operated and the pin is dropped in the following manner, viz: The cars as they are brought together for being coupled, the link, being held in one draw-head, enters the draw-head A, and strikes the trip B upon its face, and, resting on its lower end 2, as shown in Fig. 1, drives it back into the position as shown in Fig. 2, in its receptacle in the arch of the dome, with the upper end 1 depressed, the descending pin C aiding in overcoming the trip, when the pin falls, passing through the opening in the draw-head and coupling-link, completing the operation of coupling, thus holding the link from being withdrawn until desired.

It will be seen that the short arm or upper end 1 of the trip B, when in this position, holds the pin from jumping out of its position or yielding laterally, while the pin prevents the trip descending into the cavity of the

dome and coming in contact with the link when coupled.

I am aware that pivoted stirrups or trips for dropping coupling-pins automatically are old; but my invention does not aim broadly to cover this feature, but the features of permitting the pin to remain set all times when required, and the link to be withdrawn without disturbing it, and the holding of the trip in its place beyond the reach or interference of the link when the cars are coupled; also the combined action of the pin and link in carrying the trip to its position, as shown in Fig. 2, and the mutual action of the trip and pin in that position, and the facility of coupling and uncoupling cars when jammed together or apart without failure and without danger to brakemen.

My device can be operated by a lever placed on the top or side of a car, and by a single depression or turn of the handle of the lever the coupling-pin can be withdrawn and set for coupling, or the cars uncoupled and set for coupling.

What I claim is—

The crescent-shaped or curved and pivoted trip B, having the tapering end 2 and short arm 1, in combination with the draw-head A, slotted at *a*, pin C, and link D, all as and for the purposes set forth.

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Witnesses:

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