



# UNITED STATES PATENT OFFICE.

DAVID V. B. SMART, OF TROY, NEW YORK.

## IMPROVEMENT IN CAR-COUPINGS.

Specification forming part of Letters Patent No. 194,792, dated September 4, 1877; application filed March 6, 1876.

*To all whom it may concern:*

Be it known that I, DAVID V. B. SMART, of Troy, in the county of Rensselaer and State of New York, have invented a new and Improved Car-Coupling; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a side elevation of my improved car-coupling; Fig. 2, partly a plan view and partly a horizontal section; and Fig. 3 is an end elevation of the same.

This invention relates to an improved car-coupling of that class which interlock in self-acting manner without requiring the brakeman to enter between the cars and expose himself to danger; and the invention consists of a draw-bar with enlarged front or head, which is stiffened by horizontal brace-bars, and provided at one side with an enlarged and backwardly-inclined shoulder or catch-bar, on which a pivoted and spring-acted coupling-hook of the connecting draw-bar couples at any height.

The coupling-hook is pivoted between the stiffening-braces of the draw-bar, and extended beyond the head sufficiently to provide for the enlarged catch-bar of the connecting draw-bar.

In the drawing, A represents the draw-bar of my improved car-coupling, and B the front or head of the same, which is extended upward and downward to sufficient length to provide for the convenient coupling of cars having platforms of different heights. The upper and lower ends of the head B are connected by curved or diagonal braces B<sup>1</sup> with the draw-bar, which has a central longitudinal recess for the coupling-hook D that is pivoted at the rear part of the recess, curved sidewise, and extended beyond the head B, having a hook end, F, whose outer side is curved to couple self-actingly, and whose inner side is inclined in backward direction.

The head B is stiffened at intermediate points between the ends by horizontal brace-bars B<sup>2</sup> that impart the required strength and rigidity to the head to resist the concussions of the cars in coupling with each other.

The coupling-hook D is forced against the

side of the head B by a strong band-spring, G, that is attached to the draw-bar, and is drawn back from the head so that the hook end F clears the edge of the draw-head by a chain, K, and lever H, or other equivalent uncoupling mechanism that is operated either from the platform, top, or side of the car.

The draw-head is provided at the side opposite to that on which the coupling-hook is arranged with a vertical flange or catch-bar, E', that increases gradually in thickness toward the outer edge, and which has at the inside or rear face an angle of inclination corresponding to that of the inner side of the hook end F. This secures the intimate and reliable interlocking of the coupling-hook of one draw-bar with the enlarged catch-bar of the connecting draw-head, while it increases the strength of the same at the point of greatest strain. The heads B are also provided with a horizontal opening, I, for the entrance of the ordinary coupling-link, and with holes J in the top, and intermediate brace-bars for the coupling-pin.

The approach of the cars for coupling brings first the curved ends of the hooks in contact with the enlarged catch-bars, and causes their lateral spreading until they have passed back of the catch-bars, and are then thrown inwardly by their springs, so as to interlock with the same in reliable manner.

By drawing back the coupling-hooks the cars are easily uncoupled, and thus a coupling of simple construction, but considerable strength and durability, obtained.

I am aware that car-couplings have heretofore been made with enlarged head, a reinforced face-plate braced at the top and bottom and on the sides, in connection with spring-hooks, and I do not claim such devices broadly.

In my construction the hook with a beveled face engages with the beveled face of the opposite draw-head, and the draw-heads are made with braces B<sup>1</sup> and B<sup>2</sup>, thus making a light, strong draw-head, and at the same time providing a long beveled front face to engage with the hook.

Having thus described my invention, what I claim as new is—

In automatic car-couplings, the draw-bar A,

having an acutely-beveled hook, D, pivoted at its rear extremity, and supported by a spring extending forward and beyond the pivot of the hook, and an enlarged head, B, formed with a face-plate, E, re-enforced upon one side by a vertical flange or catch-bar, E', having an acute edge, and supported at the

top and bottom by diagonal braces B<sup>1</sup>, and also internal horizontal braces B<sup>2</sup>, substantially as shown and described.

DAVID V. B. SMART.

Witnesses:

T. B. MOSHER,

ALEX. F. ROBERTS.