

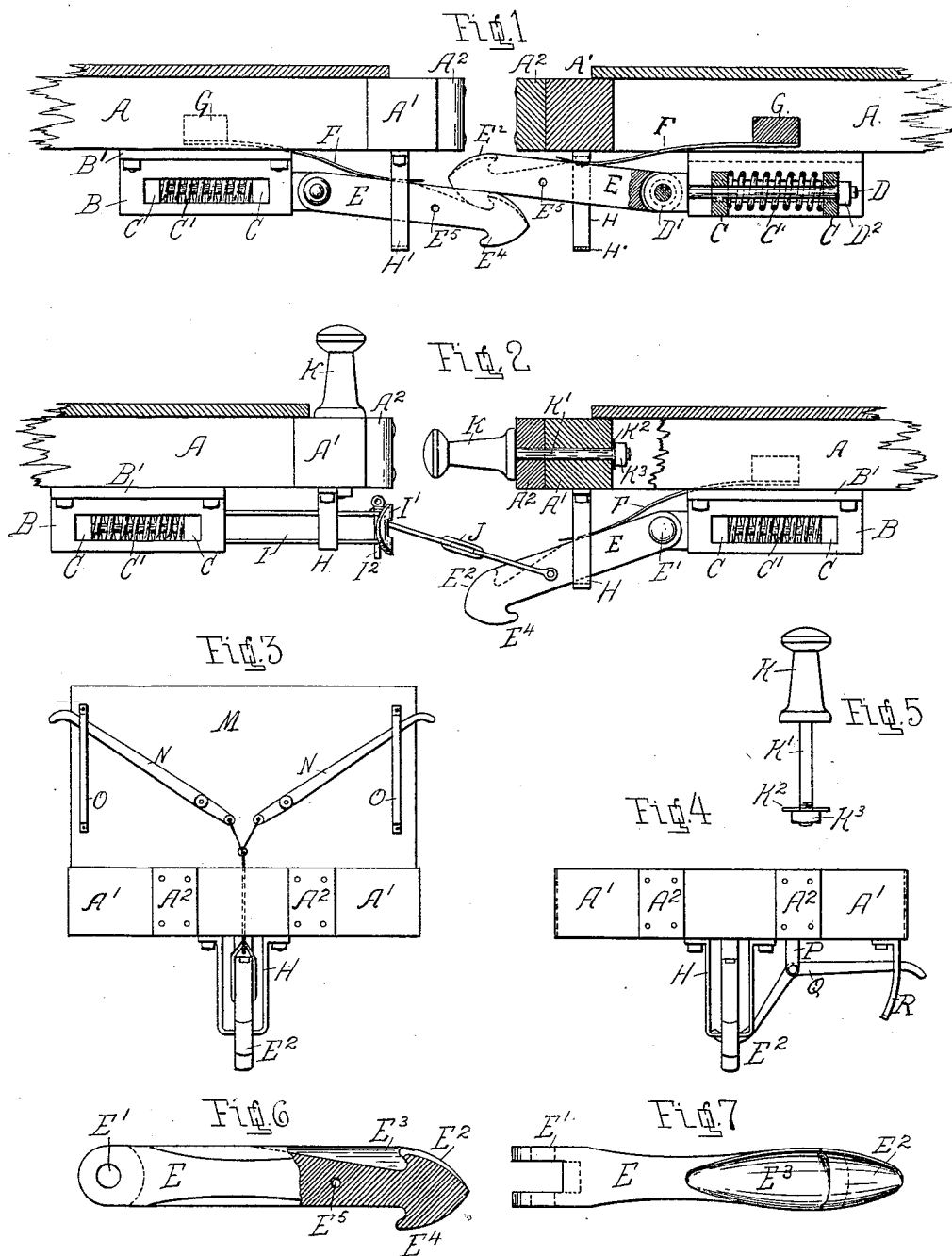
(No Model.)

J. S. SMITH & M. H. MOTES.

AUTOMATIC CAR COUPLING.

No. 348,479.

Patented Aug. 31, 1886.



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JOHN S. SMITH AND MARTIN H. MOTES, OF HAMBURG, PENNSYLVANIA.

AUTOMATIC CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 348,479, dated August 31, 1886.

Application filed February 11, 1886. Serial No. 191,561. (No model.)

To all whom it may concern:

Be it known that we, JOHN S. SMITH and MARTIN H. MOTES, citizens of the United States, residing in the town of Hamburg, county of Berks, State of Pennsylvania, have invented a new and useful Improvement in Automatic Car-Couplings, of which the following is a specification.

This invention is more particularly related to the class of automatic car-couplers, yet it is adapted to couple with all varieties of link, hook, or draw-bar couplers.

The object of the improvement is to secure a safe, sure, and ready means of coupling-cars together (without risk of life) by a peculiar construction of coupling-hooks and their combination with levers extended to the outside of the cars, whereby without passing between the cars the same may be coupled or uncoupled by a manipulation of the said levers, height of draw-bar centers above the rail not affecting the ability to couple the same together.

The drawings herewith, in which similar letters of reference indicate similar parts, show very fully the nature of our invention.

Figure 1 is an elevation, partly in section, of two flat-bottom cars having our improved hooks mounted thereon and coupled together. Fig. 2 represents one end of a car having our improved hook coupled to a car provided with the ordinary draw-head, and showing the use of the independent buffers. Fig. 3 represents an end view of a gondola or box car showing a mode of coupling and uncoupling by a system of levers, chain, and link from the outside of the car. Fig. 4 represents the front end of a flat-bottom car and the arrangement of lever and hook for coupling and uncoupling the same, as before, from the outside of the car; Fig. 5, an elevation of the independent buffer; Fig. 6, an enlarged elevation, part in section, of one of our improved hooks; Fig. 7, a plan of the same.

A represents the sides of the car; A', the end timbers; A², the bumpers; B, the draw-bar-spring pockets; B', securing-flanges to the same; C, the spring seats and guides; C', the spring; D, the usual draw-bar bolt; D', the head of the same; D², a nut or key to secure the bolt; E, the improved coupling-hook, having a barbed head with the lower or riding barb, E¹, free, and the upper barb, E², boxed

in by the sides of the coupling-bar, forming a pocket, E³, with a rear upward-sloping base, the sides of the pocket converging toward the rear, as shown more clearly in Fig. 6. The upper face of the barb E² is hollowed or grooved to act as a guide to the riding barb E¹ as it mounts the barb E² to couple.

F is a strong flat spring secured to a block, G, beneath the car, and extending outward and resting its free end upon the upper face of the coupling, as shown. This spring keeps the hooks, when uncoupled, pressed down upon the cross-bar H' of the yoke H, which is secured to the under side of the end timbers.

I represents the ordinary draw-bar, I' the head, and I² the coupling-pin.

J is an ordinary coupling-link, connecting a draw-head car with a car provided with our improved coupler.

K represents an independent buffer, usually carried in pairs, and preferably upon each car provided with our improved coupler, the platform having vertical holes for the reception of the stems K' and the bumpers A², and end timbers, A', horizontal holes for the same purpose, the stems K' being long enough to pass through the same, and are retained in a horizontal position by a washer, K², and nut or key K³. They are only used when a car provided with our improved coupling-hooks is to couple with a car provided with the ordinary draw-bar or hook, as shown in Fig. 2. The buffers are then lifted from the platforms and placed as shown. The cars may then be coupled, hauled, or backed without any risk of injuring the same.

The buffers may be turned up of hard wood, in which case the head would be hooped with iron; or they may be cast as a light shell of cast-iron. In either case the stems K' would be a bolt of about one and a half inch diameter.

The construction of the coupler is as follows: The hooks are all of one pattern, and may be made of steel, wrought-iron, or of tough charcoal cast-iron. The receiving-barb E² is grooved, to act as a guide to the riding barb E¹. Although we give preference to the groove, the face of the barb may be made plain, and the barb E² is re-enforced by the sides of a pocket, E³, in the rear of the same, forming with the rear of the sloped base a continuous unbroken wall around the same, the hooks or

couplers being secured to the draw-bar bolts, with the pocket-face upward. A steel spring, F, secured to a block, G, secured between the longitudinal stringers above and between the
 5 spring-pockets, has its free end resting upon the upper face of the coupler, and in an uncoupled condition the hooks are pressed down upon the cross-bar H' of the yoke H.

When cars of a uniform height of draw-bar
 10 above the rails are provided with our improved coupler, the action of the same when the cars are pushed together is to automatically couple them to each other, the riding barb E⁴ riding
 15 up over the receiving-barb E², and, dropping into the pocket E³, is retained by interlocking with the barb E²; but when cars having their draw-bar centers at different heights above the rails and provided with our car-coupler
 20 then it becomes necessary to provide the means of adjusting the coupling-hooks relative to each other from the outside of the cars. To do this we have adopted the system of levers shown in Figs. 3 and 4, adapted to all styles
 25 of cars and insuring perfect safety to the brakeman in the act of coupling the same.

We make no claim to the levers and their connections with the hooks, as it is an old device adapted to our purpose. The mode of
 30 coupling therewith is as follows: On approaching a stationary car, with its draw-bar center lying above that of the car to couple therewith, the brakeman applies his hand to the lever N or Q and raises the hook of his car
 35 against the depressing force of the spring F, and thus enables the riding hook or barb E⁴ to ride over and interlock with the boxed barb E². If the draw-bar center is below that of the approaching car, then the barb E⁴ will
 40 mount over that of E² automatically, the spring F permitting the movement, and will press

the barb E⁴ into contact with barb E² as soon as the pocket E³ is reached.

For the purpose of uncoupling, the levers N or Q serve a more important purpose, as the
 45 arrangement or construction of the riding and boxed barbs is such that they will not automatically be released from each other; but when it is desired to uncouple, all that is necessary is for the brakeman, as the cars come
 50 together, to depress the lever N or Q connected with the riding hook, when it will instantly be raised out of the pocket, and the car will be free.

Having shown our improvement and de-
 55 scribed its use and advantages, we desire to secure by Letters Patent the following claims thereon:

1. In a car-coupling, the double-barbed draw-bar E, having one of its barbs projecting be-
 60 yond the face of the draw-bar, the other barb having its point on a plane with the upper face of the draw-bar, and having an inclined or slanting pocket, E³, in combination with a sliding spring-actuated bolt, said bar being
 65 bifurcated to receive the bolt, and the flat spring bearing against the upper face of the draw-bar, substantially as set forth.

2. In a car-coupling, the combination, with a sliding spring-actuated bolt, of a draw-bar
 70 bifurcated at its rear end and pivoted to the bolt, said bar having double barbs, as described, the yoke H, for supporting the draw-bar, the block G, and the spring F, secured thereto, and bearing upon the draw-bar, as
 75 set forth.

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