

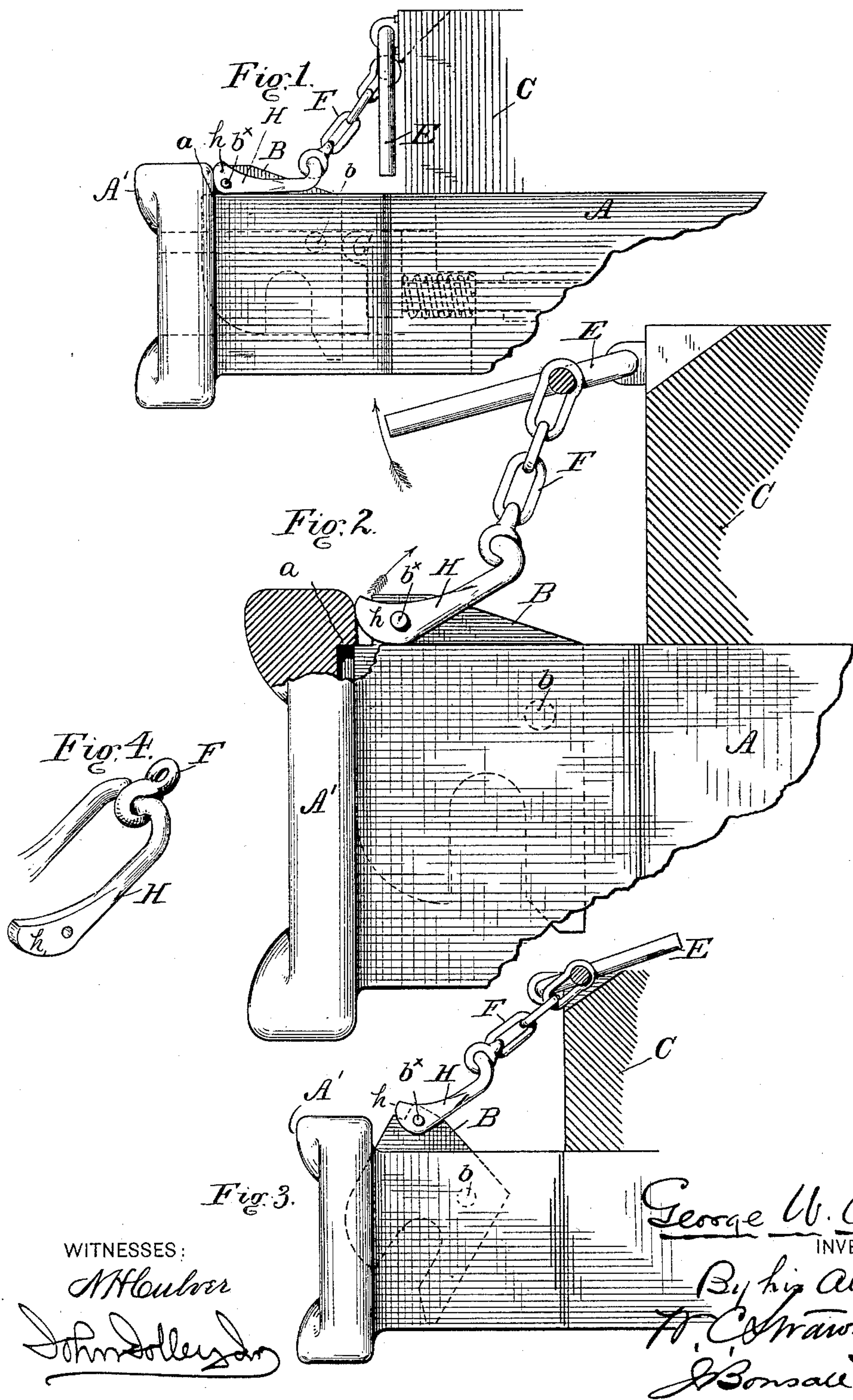
(No Model.)

G. W. CURTIS.

CAR COUPLING.

No. 327,534.

Patented Oct. 6, 1885.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GEORGE WILLIAM CURTIS, OF PHILADELPHIA, PENNSYLVANIA.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 327,534, dated October 6, 1885.

Application filed June 1, 1885. Serial No. 167,332. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE WILLIAM CURTIS, a citizen of the United States, residing in the city and county of Philadelphia, and State of Pennsylvania, have invented an Improved Car-Coupling, of which the following is a specification.

This invention is an improvement upon a certain car-coupling invented by me and patented to me in and by United States Letters Patent No. 234,175, issued November 9, 1880, to which patent reference is directed for the better understanding of this improvement.

My said patented invention belongs to a class of car-couplings in which the ordinary closed oval link is employed in connection with a coupling-hook which is pivoted and adapted to slide within a draw-head.

My invention is also an improvement upon a certain improved car-coupling invented jointly by me and John Wood, jr., the said improvement being itself an improvement upon my said patented invention, for which joint improvement application for patent was filed in the United States Patent Office, January 31, 1885, as Serial No. 154,509.

My present invention comprehends improvements in the means of connection of the coupling-hook with the crank and chain, which latter are employed either to uncouple said hook or to set it so as to be incapable of coupling.

The specific object of my improvements is to adapt my patented coupling, as well as the improved coupling of Curtis & Wood, for use with a class of freight or other cars, the construction of which is such that it becomes essential that the draw-head should not project more than a short distance beyond the platform, buffer-head, or end of the car, and in which, in consequence of such condition, the chain and crank must be applied in such position that the pull upon the coupling-hook, instead of being backward at a comparatively slight angle, must of necessity be almost directly upward and at an abrupt angle.

As it is manifest that a pull directed abruptly upward would not so readily dislodge the head of the coupling-hook from beneath the shoulder formed upon the enlarged bell-mouth of the draw-head as a pull directed

backward, it becomes essential to provide means by which a pull directed abruptly upward can operate; first, to draw the coupling-hook backward in a direction longitudinal with the draw-head until its head becomes released from the shoulder; and, second, to draw or tilt said hook upward about its pivot. This result I accomplish by providing, in connection with the coupling-hook, a cam or eccentric controlled by the chain and its crank and acting against the draw-head as a resisting surface.

Apparatus constructed in substantial accordance with that represented in the drawings and described in this specification embodies a good form of my improvement.

In the drawings, Figure 1 represents in side elevation a coupling embodying my improvements. Fig. 2 is a similar view enlarged and a portion of the bell-mouthed head of the draw-head being, for clearer illustration, in section. Fig. 3 is a view similar to Fig. 1, save that the parts are represented in the position which they occupy when the coupling-hook has been raised. Fig. 4 is a view in perspective of a form of cam-lever which I find it convenient to employ.

Similar letters of reference indicate corresponding parts.

In the accompanying drawings, A represents the draw-head, and A' the enlarged buffer-head thereof. *a* is the shoulder beneath which the notched head of the coupling-hook engages. B is the coupling-hook, which is provided with pivots *d*. C is the platform or frame-work of the car; E, the crank applied thereto, and F the chain, rod, link, or kindred connection, which is operated by the crank and which, according to my patented invention, is directly connected with the coupling-hook. G is the spring-controlled buffer, which operates in connection with the coupling-hook.

The foregoing are features described and claimed in my patented invention.

H is a cam or cam-faced lever, preferably made in the form of a yoke, and pivoted at *b* to the coupling-hook. This cam device is, as represented in the drawings, essentially a lever of the first order, one arm or member of which is connected with the chain, rod, or link,



which at its opposite extremity is connected with the wrist-pin of the crank, and the other arm, member, or extremity of which is provided with a cam-surface, *h*, adapted to act  
 5 against the rear face of the buffer-head of the draw-head, or, if desired, against any projection or rigid fixture upon said draw-head. This cam-faced lever may, as represented in  
 10 Fig. 4, be made in the form of a lever-yoke adapted to straddle the coupling-hook, in which case it is of course provided with two cam-surfaces, one upon each side of the coupling-hook, both of which bear and are adapted to act against the buffer-head.

15 In the normal position of the parts, or when an entered link has been coupled by the hook, the cam-lever occupies the position shown in Fig. 1, in which position the head or the notch in the head of the hook is engaged with the  
 20 shoulder of the buffer-head.

When it is desired to uncouple, the crank is thrown from the position represented in Fig. 1 to that represented in Fig. 3, and in so doing the action (which is represented in Fig.  
 25 2) is to elevate the rear or yoke end of the cam-lever about its pivot, and so to cause its cam-surfaces to act against the buffer-head, with the result that the buffer-head not yielding the coupling-hook is drawn backward,  
 30 compressing the spring-buffer until such movement of the hook has been effected as to secure the release of its head from beneath the shoulder on the buffer-head, the hook, so soon as said release has been accomplished, being lifted  
 35 by the chain and cam-lever, then being a part of the chain, so to speak, into the position represented in Fig. 3.

In the said last-named position, represented in Fig. 3, the crank having been deflected  
 40 completely backward, the hook is sustained in such position that the automatic coupling is impossible.

While I have represented in the drawings,

and especially in Fig. 4, a yoke-shaped cam-lever as a preferred form of cam device, I yet 45 do not limit myself thereto, as the gist of the invention resides in the provision, in connection with the coupling-hook, buffer-head, and crank and chain, of a cam or eccentric or cam-lever connected with the chain in such man- 50 ner as to effect, when stress is exerted upon the chain, a backward movement of the coupling-hook, and then, in connection with the chain, an upward movement or tilting thereof. This result can, manifestly, be accomplished by cams 55 of other form, construction, and mode of application than that represented. That represented, however, is a convenient construction.

Having thus described my invention, I claim— 60

1. The combination, in a car-coupling, of a draw-head, a pivoted coupling-hook, the head of which is adapted to engage with a shoulder or projection upon the draw-head, a spring-controlled buffer operating in connection with 65 the coupling-hook, a crank and chain connection applied to the car, and a cam-lever connected with both chain and coupling-hook and adapted as to its cam-surface to act against the draw-head as an abutment or resisting device, substantially as and for the purposes set forth. 70

2. The combination of the draw-head, the pivoted coupling-hook, the spring-controlled buffer, the crank and chain, and a cam-faced 75 yoke-lever pivoted to the coupling-hook connected with the chain and adapted as to its cam-faces to act against the draw-head as a resisting-abutment, as and for the purposes set forth. 80

In testimony whereof I have hereunto signed my name this 14th day of April, A. D. 1885.

GEORGE WILLIAM CURTIS.

In presence of—

J. BONSALE TAYLOR,

WM. C. STRAWBRIDGE.