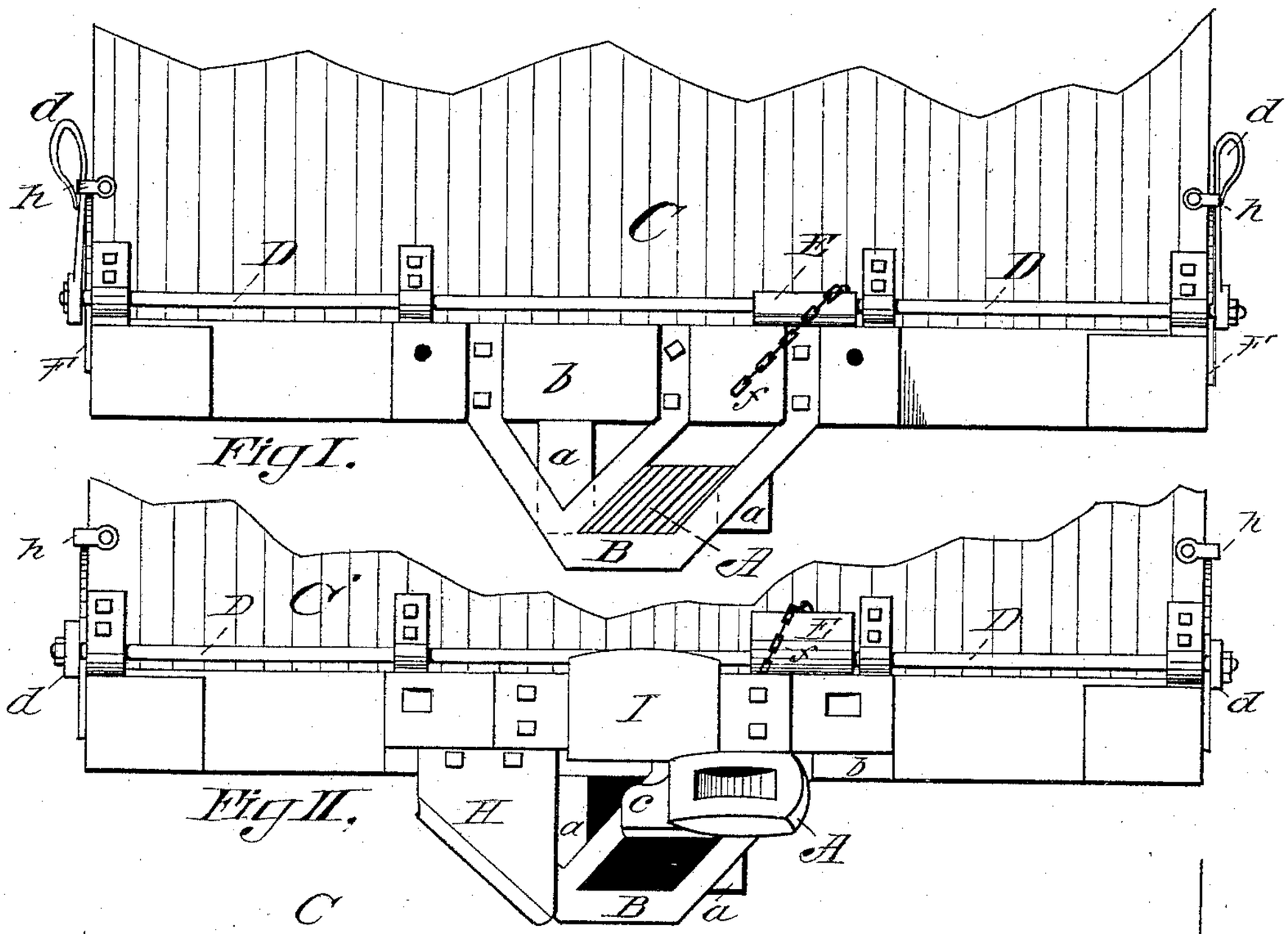
(No Model.)

R. HITCHCOCK.

CAR COUPLING.

No. 314,577. Patented Mar. 31, 1885.



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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 314,577, dated March 31, 1885.

Application filed November 7, 1884. (No model.)

To all whom it may concern:

Be it known that I, ROBERT HITCHCOCK, a citizen of the United States, residing at Springfield, Hampden county, State of Massachusetts, have invented a new and useful Self-Coupling Draw-Bar, of which the following is a specification.

This invention relates to an improved self-coupling draw-bar for railway-cars; and the first part of my invention consists of a pair of draw-bars in the contiguous ends of two cars, each draw-bar having a hinge upon its inner end, each having an end projecting beyond its car, and each projecting end provided with a hook-surface and a beveled head beyond the same, in combination with two yokes upon the corresponding ends of said cars, adapted to support the free ends of the draw-bars, and adapted to guide their hook ends upward and away from each other under pressure brought against their inclined ends to permit at a certain point their hooks to engage by gravity in following back with their draw-bars upon their guiding-yokes, each draw-bar being also provided with means for manually raising it in its yoke to uncouple, or to place it in a position to prevent the act of coupling.

The second part of my invention consists of a provision against draw-bars so constructed and arranged becoming uncoupled by the motion of the cars in certain contingences, as fully hereinafter described.

My invention is fully illustrated in the accompanying drawings, in which Figure I is a partial end elevation of a portion of a car-body with parts of my invention removed. Fig. II is a partial end elevation of a car-body, showing my invention applied thereto. Fig. III is a plan view of one end of a car-body, having the hook of its draw-bar engaged with a corresponding hook, and its side timbers, having the car removed therefrom. Fig. IV is a detail in profile of a part of my invention, and Fig. V is an elevation of the handle mechanism for operating a draw-bar.

A is a draw-bar held between side timbers, *a a*, below the car-body, and connected at its inner end to a spring-follower in the ordinary way. B is a stirrup or yoke, pendent from the end of the car C. The yoke B is shown in Fig. I let into and firmly bolted to the dead-wood, *b*. The yoke, preferably formed of wrought-iron or steel, comes over the ends of the timbers *a a*, and presents a profile in plan view of a horizontal edge with two parallel sides therefrom at an oblique angle, and having the base of the car-body for the fourth side of the rhomboid thus formed. Within this yoke B, and conforming to three sides of it, and bearing upon the lower horizontal side in its normal position, is the draw-bar A. The draw-bar A, when bearing upon the base of the yoke B, as seen in the section Fig. I, has space above it in the yoke to permit it to be swung upon its inner hinge to have its outer hook end, as seen in Fig. II, clear above a corresponding hook resting upon its bearing in its yoke. The motion required at the hinge end of the draw-bar is so slight that a spindle carrying the spring-follower and keyed loosely in the end of the draw-bar gives ample play to the draw-bar at this point.

In Fig. III a joint is shown formed to have a hinge coincident to the line of movement of the draw-bar. As shown in Fig. III, opposite corners of the side timbers, *a a*, are beveled away to offer no obstruction to the movement of the draw-bar in its yoke. The draw-bar A, held at one end by the spring-follower, is provided at the other with a flange, *c*, which comes against the outside of the yoke B, to hold the hook end projected. The front ends of two draw-bars being correspondingly inclined, as seen in Fig. III, the result of their coming forcibly in contact is that each is forced from its seat in the yoke up the inclined sides thereof until the inclined heads, clearing each other, free the hooks to permit the draw-bars by gravity to "self-couple."

As a convenient means of raising a draw-bar to uncouple, as well as to prevent a car from coupling, a crank-shaft, D, is shown over the end of the car, supported in suitable bearings, provided with crank-handles *d d*, and having a crank-roll, E, over which passes a chain, *f*, made fast at one end to the roll E and at its other to a staple, *g*, in the draw-bar. The handles *d d* are preferably supplied with a spring, and bear against a track, F, provided with a stop, *h*, at the upper end, and with a stop, *i*, over which the handle is sprung at the lower end, so that in operation from the

car-ladder by the foot, or from the ground by hand, the handle *d* is swung against stop *h*, as seen in Fig. I, to leave the draw-bar in an operative position, or is swung down to spring over and catch against stop *i* to raise one draw-bar, as seen in Fig. II.

To prevent any liability of the hooks separating from any motion of the cars due to the construction of the road or other causes, I provide a surface, H, arranged to project from the end of one car approximately coincident to the outer bearing-edge of the yoke upon the corresponding car, and provide the contiguous ends of both cars with said surfaces, in arrangement and configuration reverse counterparts of each other, by means of which, during the moment of time any movement of separation tends to take place, the opposite ends of the hooks strike the near surfaces H, and all motion of the kind is at once arrested.

In Fig. IV the surface H, formed of a plate securely bolted to the dead-wood, is shown.

In the drawings a spring-buffer, I, is shown arranged to relieve the draw-bars of a portion of the shock of impact.

The draw-bar hooks are shown hollowed out upon their ends and otherwise adapted to receive the end of the ordinary link.

Now, having described my invention, what I claim is—

1. An automatic car-coupler consisting of a draw-bar hinged at its inner end to the car-body, and having a hook and beveled head at its outer end, a yoke at the end of the car having an upwardly-inclined oblique passage through which the body of the draw-bar passes, and a chain and attachments connected to the bar by which the same may be lifted in uncoupling, all in combination, substantially as stated.

2. The combination, with the end of a car, of a draw-bar hinged thereto at its inner end, and having a hook and beveled head at its outer end, a yoke attached to the car, having an upwardly-inclined passage through which the body of the draw-bar extends, and a projecting guard which extends near the draw-bar, to prevent accidental uncoupling, all substantially as described.

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