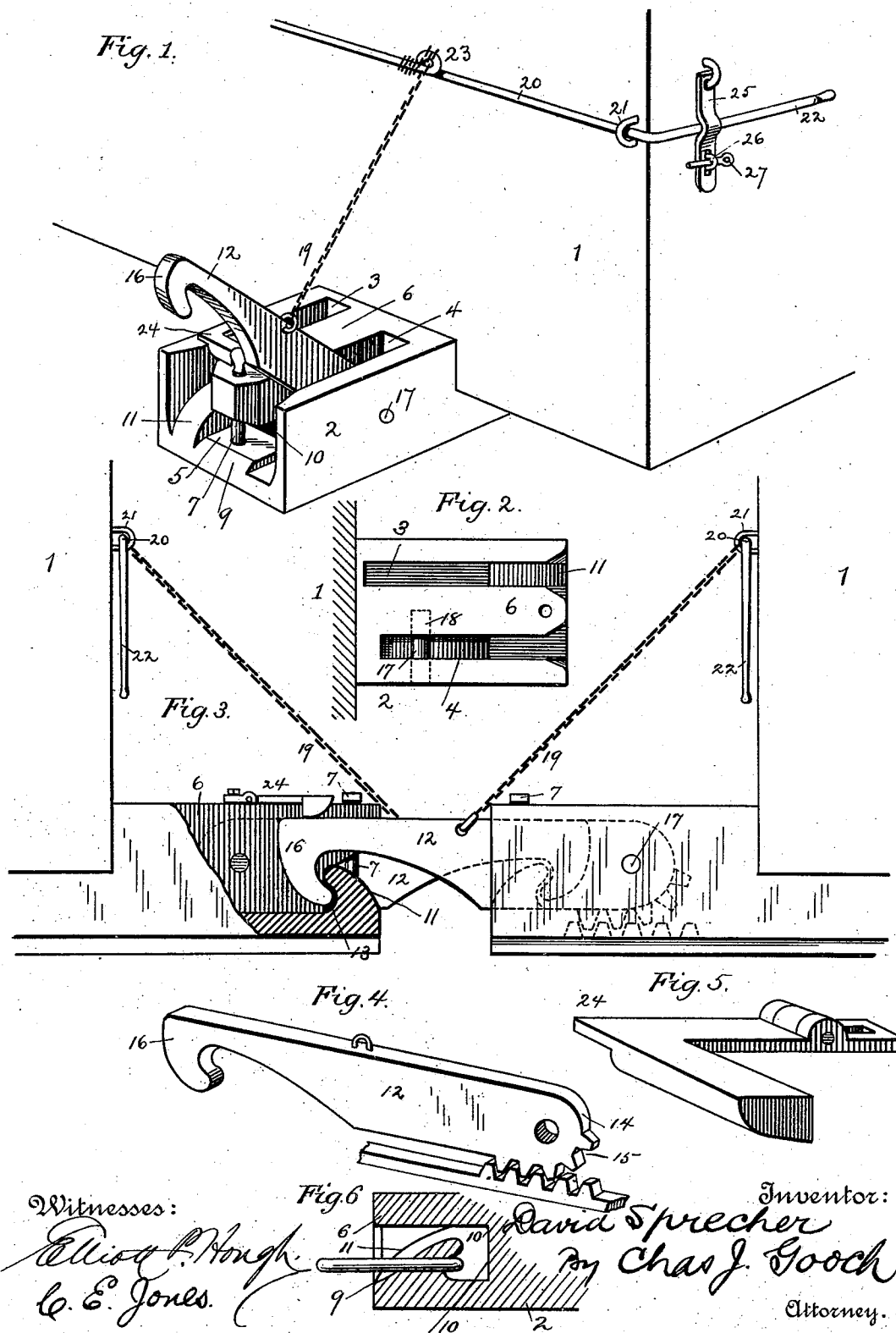


(No Model.)

D. SPRECHER.
CAR COUPLING.

No. 503,175.

Patented Aug. 15, 1893.



UNITED STATES PATENT OFFICE.

DAVID SPRECHER, OF RICHVIEW, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 503,175, dated August 15, 1893.

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To all whom it may concern:

Be it known that I, DAVID SPRECHER, a citizen of the United States, residing at Richview, in the county of Washington and State of Illinois, have invented certain new and useful Improvements in Automatic Car-Couplings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements, as hereinafter set forth, in automatic car couplers.

In the accompanying drawings—Figure 1 represents a perspective view of one of my improved coupling devices and accessories attached to a car. Fig. 2 represents a top plan view of one of my improved draw-heads. Fig. 3 represents a side elevation, partly broken away, of portions of a pair of cars with a pair of my couplers in operation and with the coupler actuating and securing devices connected therewith. Fig. 4 represents a perspective view of one of the coupling-hooks and actuating slides. Fig. 5 represents one of the coupler-securing pivoted or hinged dogs or latches. Fig. 6 represents a detail sectional view of a portion of the draw-head with hook shaped link receiving-horn.

1 represents an ordinary box freight-car, though, of course, my improvement is equally well adapted for application to passenger and other cars as well as of the class delineated in the drawings.

2 represents the draw-head constructed according to my invention. This draw-head, which is of similar construction at each end of the car, is formed with two longitudinal slots, 3, 4, one adjacent to each side wall, of the draw-head and extending rearwardly to the end of the car, and a central slot, 5, extending part of the way back, and a central longitudinal rib, 6, through which, vertically, may be passed a coupling-pin, 7, to engage an ordinary link-coupling, though, as shown in Fig. 6, the central portion of the draw-head may be provided with a bevel-faced horn or hook, as 11, to receive the coupling-link *a*. In this latter arrangement the front and top of said horn or hook are beveled, as shown, to enable the link to easily ride up its face, and

has a recess in the inner edge or face to receive and hold the link, as clearly shown in said Fig. 6.

The floor of the central portion of the mouth of the draw-head is beveled rearwardly and upwardly, as shown, at 9, to facilitate the entrance of the coupling-link.

10 represents a stop or buffer within the central recess to receive the impact of the coupling-link *a*.

In the mouth of each side slot is a bevel-faced hook, horn or catch, 11, up the incline of which the coupling-hooks, 12, to be presently described, ride, when a pair of cars having my improved coupling-attachments come into juxtaposition. The rear faces of these hook-shaped horns, or catches are recessed, as shown at 13, to insure the hooked ends of the coupling hooks securely engaging with the draw-head. As the cars come together the coupling-hooks, 12, of which there is one only pivotally attached within each draw-head, ride up the inclined face of the beveled and hook-shaped front of the draw-head and drop into engagement within the slot or groove 3 or 4. As the cars pull apart, on the forward movement of the train, said hooks, 12, are drawn into engagement within the recessed rear face, 13, and are thereby held tightly, the tension of the cars serving to but hold the coupling-hooks the more firmly in locking position. The longitudinal side slots, 3, are open at their tops to permit of the free vertical movements of the coupling-hooks, 12. These coupling-hooks, 12, have rounded rear upper ends, 14, and notched or toothed rear and bottom edges, 15, said notched or toothed portions, 15, engaging with similar teeth on a slide rack *b* in the bottom of the draw-head. The primary function of this slide rack is, in combination with the teeth, 15, on the rear of the coupling-hook, to secure the lowering of said hook into operative position. This may be accomplished in various ways, for instance, the slide may be of sufficient length to, when the hook is raised, project beyond the mouth of the draw-head so as to impinge against the draw-head of an adjacent car on the cars coming together, such impact forcing the slide rack rearward and causing its teeth to engage with and turn the toothed rear end of the coup-

ling-hook so as to throw the hooked end thereof down to a horizontal position; or said slide may have attached thereto a rod or lever by which said rack may be slid back and forth by hand to either raise or lower the front end of the hook. Such methods of actuating the slide form no part of my invention, and are so well known that it is not deemed necessary to illustrate them. Of course, the latch, 24, would be raised before the hook, 12, could be raised, and the handle, 22, released from lock before the coupling-hook could be lowered. The rear portions of these coupling-hooks and for a sufficient portion forwardly of their center of gravity, are of greater thickness and width than the forward portion so that the tendency of the coupling hooks will always be toward a horizontal and downwardly-acting movement; thereby serving to maintain said hooks in horizontal position of lock.

16 represents the engaging hook of the hook, 12. It will be observed that the under edge of this hook, 16, is of such a curvature as to insure its secure engagement with the hooked-recess of the draw-head.

17 represents a pivot-pin which is passed transversely through the side wall of the draw-head and through the rear end of the hook, 12, into engagement with the central bridge, 18 for the purpose of pivotally supporting the hook, 12, in its groove. At or about the center or slightly in advance thereof, which preferably, is either a transverse hole through the hook 12 or an eye on the top thereof through either of which is passed a chain or equivalent device, 19, which is there attached to said hook. The other end of this chain, or its equivalent, is attached to a transversely-extending rod, 20, which is rockingly supported in eyed bearings, 21, one at or adjacent to each side of the car; right-angled arms, 22, extending from said rod, 20, by means of which a track hand or brakeman may readily grasp said rod, 20, and rock it in its eyed bearings, or to turn said rod round and round within said bearings to twine the lifting chain, 19, around the rod, when it is desired to raise the locking-hook, and thereby raise said hook out of coupling operation. It will be observed that this rod, 20, is twisted around at that portion of its length in line with the groove within which the coupling-hook is located, so as to provide an eye or loop, 23, within which the upper end of the chain or its equivalent may be secured.

Suitable means, such, for instance, as a pivoted dog or latch 24 may be arranged in or at one side of the draw-head, or in any other suitable position to rise when the hook, 12, enters the draw-head and drop down upon the top edge of said hook and prevent its rising up out of coupling engagement when the bumpers or draw-heads of a pair of cars come closely together upon the limbering up of a train. Such a device, as 24, bearing down upon the coupling hook will entirely prevent the

hook rising automatically out of coupling engagement and will insure the hook always remaining in locking position whatever the relative positions of the coupled cars.

A car having my improvement applied thereto is capable of being coupled with cars having the ordinary link coupling as all that is necessary, in such case, is to wind the chain 18 on the rod so as to raise the coupling hook up against the end of the cars. In this position the end hand-grasps may be locked so as to prevent the automatic turning of said rod and the consequent unwinding of the chain and the fall of the coupling-hook, by any suitable locking device, such, for instance, as a hinged catch, 25, engaging with a staple, 26, through which a locking pin, 27, may be passed; this arrangement will retain the hand-grasp and prevent the rod turning. The central recess in the draw-head is of sufficient depth to admit of the coupling link passing rearwardly therein upon impact of said link with the draw-head of a coupling car to place it entirely out of the way of interference with my coupling device.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. An automatic car-coupling, consisting of a draw-head having two longitudinal grooves or ways adjacent to each side of the draw-head and having open tops, a curved, rearwardly-extending hook-shaped catch located in the mouth of one of said slotted ways and having a beveled or inclined front face and, in its rear face a hook-receiving recess, a hook-coupling pivotally supported at its rear within the other slotted way and having a notched or toothed rear and bottom edge and near its upper edge chain attaching device, as an eye or a transverse slot or hole, a notched slide or rack to engage with the notched under edge of hook-coupling, a transverse rod having right-angled hand-grasps at either end and an eye formed by twisting said rod in a portion of its length, eyed bearing supports for said rod secured to the end of the car, a chain connecting the hook-coupling and said eyed lifting-rod and a hinged latch, with suitable latch securing devices adapted to hold the ends of said lifting-rod, and a pivoted dog adapted to automatically drop and rest upon the upper edge of the coupling-hook when in locked position, substantially as and for the purposes set forth.

2. A combined automatic link and hook-car-coupling consisting of a draw-head having, adjacent to each side thereof an open topped longitudinal grooved way extending the length of the drawhead, a central bevel-floored recess to receive a coupling link, a central bridge having a vertical coupling-pin-receiving hole, a coupling-pin extending through said hole, a rearwardly curved, bevel-faced incline or hook located in the mouth of one of said side grooved ways and having in its rear edge a hook-receiving recess, a pivoted dog journaled

in the draw-head and adapted to normally assume a depressed position and rest upon the top of the coupling-hook, a coupling-hook located within the other grooved side way and having a toothed rear and bottom edge, a toothed rack located in the bottom of the draw-head with which the toothed portion of the coupling-hook engages a chain attachment forwardly of its center of gravity, said hook coupling being weighted in advance of its center of gravity, a pivot removably securing said hook coupling within the draw-head, eyed bearings attached adjacent to each side of the car, a transversely extending lifting-rod journaled in said eyed bearings and having a re-curved eyed portion in its length in line with the grooved way in the draw-head containing the hook-coupling, and right-angled hand-grasps, and a pivoted latch and securing device, substantially as described, adapted to secure said hand grasps and a lifting-chain respectively secured to the chain attachment on the coupling-hook and to the eyed portion of the lifting-rod, substantially as and for the purposes set forth.

3. A combined automatic link and hook car-coupling consisting of a draw-head having adjacent to each side thereof an open-topped longitudinal grooved way extending the length of the draw-head, a beveled coupling-link receptacle, a central bridge having a vertical coupling-pin receiving-hole, a coupling-pin extending through said hole, a rearwardly-curved bevel-faced incline or hook located in the mouth of one of said side grooved ways and having in its rear edge a hook-receiving recess, a coupling hook located within the other

grooved side way and having a toothed rear and bottom edge a toothed rack located in the bottom of the draw-head with which the toothed portion of the coupling-hook engages a chain attachment forwardly of its center of gravity, said hook-coupling being weighted in advance of its center of gravity, a pivot removably securing said hook-coupling within the draw-head, eyed bearings attached adjacent to each side of the car, a transversely extending lifting-rod journaled in said eyed bearings and having a re-curved eyed portion in its length in line with the grooved way in the draw-head containing the hook-coupling, and right-angled hand-grasps, and a pivoted latch and securing device, substantially as described, adapted to secure said hand-grasps, and a lifting chain, respectively secured to the chain attachment on the coupling-hook and to the eyed portion of the lifting-rod, substantially as and for the purposes set forth.

4. In an automatic car-coupling, the combination of a draw-head a rearwardly-extending hook-shaped horn located therein, a toothed rack located in said draw-head, a coupling-hook pivoted in said draw-head, and having a toothed bottom and rear edge, a lifting device, as a chain and actuated rod, connected with said coupling-hook, substantially as and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID SPRECHER.

Witnesses:

D. C. HUNT,
PAUL LENTZ.