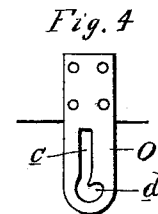
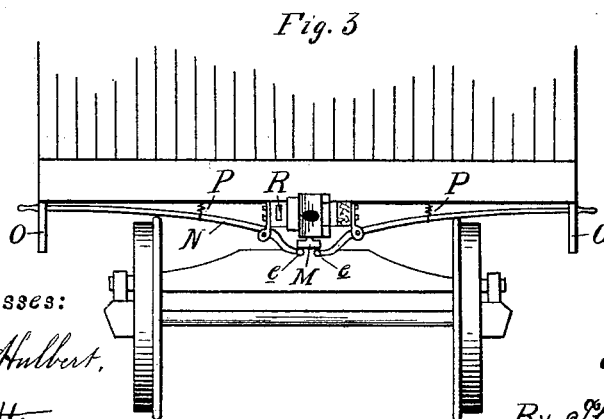
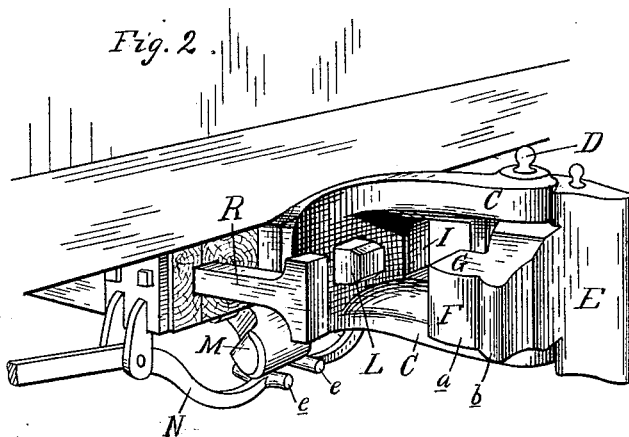
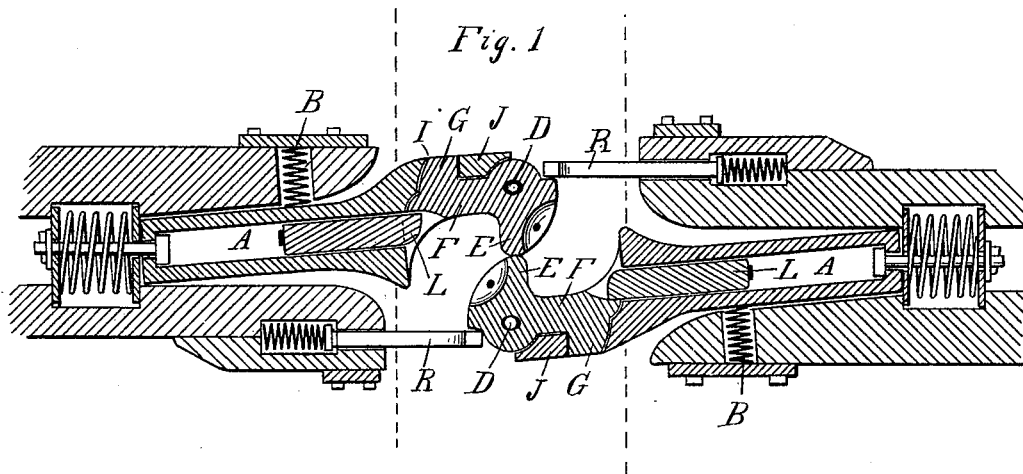


J. SKINNER.  
CAR COUPLING.

No. 386,854.

Patented July 31, 1888.



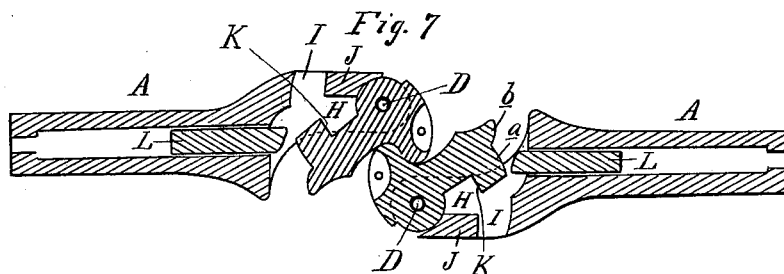
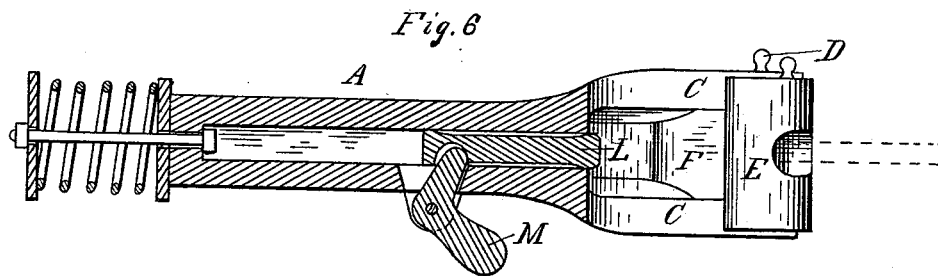
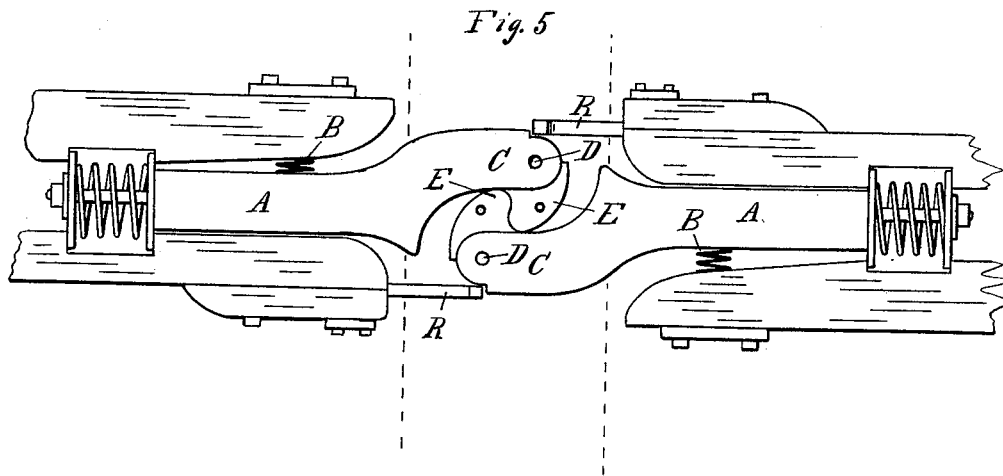
Witnesses:  
*P. M. Hulbert,*  
*Geo. Whittemore,*

Inventor:  
*John Skinner,*  
*By Thos. S. Sprague & Son,*  
*Att'y.*

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Atty.

# UNITED STATES PATENT OFFICE.

JOHN SKINNER, OF FLINT, MICHIGAN, ASSIGNOR OF ONE-HALF TO OREN STONE, OF SAME PLACE.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 386,854, dated July 31, 1888.

Application filed March 6, 1888. Serial No. 266,305. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN SKINNER, a citizen of the United States, residing at Flint, in the county of Genesee and State of Michigan, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in car-couplings; and my invention relates to that class of car-couplings known as "vertical plane-couplers."

My invention consists in the peculiar construction and arrangement of the parts, whereby the device is made in every respect an automatic coupler, and, further, in the peculiar construction of the coupling-hook and draw-head, whereby the draft is taken off of the pivot-pin of the hook; and to this end my invention consists in the peculiar construction and arrangement of the parts, all as more fully hereinafter described, and shown in the accompanying drawings, in which—

Figure 1 is a horizontal section showing two of my couplers in the act of engagement with each other, with both of the hooks locked in position. Fig. 2 is a perspective view of one of the couplers in an uncoupled position. Fig. 3 is an end elevation of a car to which my coupler is attached. Fig. 4 is a detached elevation of the stirrup in which the uncoupling-lever engages. Fig. 5 is a plan of two couplers in a coupled position. Fig. 6 is a vertical central section longitudinally through one of the couplers, and Fig. 7 is a plan view of two couplers in the act of engaging with each of their hooks in an unlocked position.

A is the draw-head, secured in the usual manner to the frame of the car and to the draft apparatus. This draw-head is provided with a limited lateral play to one side of the line of draft, with the end of the draw-head as the pivot, and it is backed on this side by the springs B, which tend to normally keep it in line with the draft. The forward end of the draw-head is cut away upon one side, and the remaining side is extended forwardly to form a side support, C, in the forward end of which the coupling-hook is pivotally secured by means of a suitable knuckle-joint, which permits the coupling-hook to swing in a hori-

zontal plane. A limited longitudinal play is provided in such knuckle by means of the pivot-pin D being made of slightly smaller size than the hole in the knuckle-joint.

The coupling-hook consists of the coupling-arm E and the locking-arm F, which latter is at about right angles or nearly so to the coupling-arm, and in a locked position of the coupling-hook extends rearwardly in line with the draft. The rear end of this locking-arm is formed upon the curved lines *a b*, and is also provided with the lateral offset G at right angles or nearly so with the locking-arm of the coupling-hook. The side support of the draw-head is provided upon its inner face with the longitudinal recess H, adapted to receive the locking-arm of the coupling-hook, and with the transverse recess I, adapted to receive the offset G of the locking-arm. This transverse recess I forms in the forward part of the draw-head a stationary abutment, J, upon which the shoulder K of the locking-arm engages.

L is a sliding latch centrally seated in the draw-head in the rear of the locking-arm of the coupling-hook, and adapted to project forward sufficiently to lock the rear end of the locking-arm into the recess in the draw-head.

M is a gravity-dog pivotally secured to the under side of the draw-head, to swing in a vertical plane and engaging with the locking-latch, all so arranged that the gravity-dog normally keeps the latch L projected forward in its locking position.

N is an uncoupling-lever, with one end extending toward the side of the car and engaging into a slotted stirrup, O, which is provided with the vertical slot *c*, which terminates in the lateral offset *d*, to hold the lever in its uncoupling position and to prevent coupling. A spring, P, is secured to this lever to hold it normally in its coupling or coupled position. The inner end of this uncoupling-lever is provided with the cross-head *e*, which impinges against the free end of the gravity-dog. This uncoupling device may be applied to both sides of the car.

R is a sliding guard secured independently of the draw-head in suitable bearings and backed by a buffer-spring, so that it has a limited longitudinal movement. This guard is placed upon the coupling side of each draw-

head and in such relation to the coupling-hook that the companion coupling can force its way into a coupled position by compressing the buffer-spring of the guard; but, when such coupling is effected, acts as a guard to prevent the disengagement of the coupling-hooks unless one or both is unlocked.

It will be seen that in the action of coupling, as shown in Fig. 1, the end of the guard impinges against the forward end of the coupling-hook, and thereby permits engagement of the coupling-hooks by being pushed out of the way; but in the coupled position it impinges against the outside of the coupling-hook, as shown in Fig. 5, and thereby prevents the uncoupling of the hooks unless the hooks, or one of them, is unlocked.

In passing around curves or in slackening up cars the guards are free to slide endwise. The necessary lateral play of the draw-heads to permit the engagement of the coupling-hooks in their locked position is easily determined.

The coupling-hook is provided with any of the usual means for coupling by means of link and pin.

The advantage of my coupler consists in its adaptation to couple with the coupling-hook in any position and in the peculiar coaction of the coupling-hook with the draw head, whereby the whole draft is transmitted from the coupling-hook directly to the draw-head without the intervention of the pivot pin, which stands loosely in its socket, and may be withdrawn without disturbing the coupling.

What I claim as my invention is—

1. In a car-coupling, the combination of a draw-head mounted to have a lateral play to one side of the line of draft and cut away at its forward end upon one side to form a solid abutment and extended upon the other side to form a side support for the coupling-hook, a coupling-hook pivotally mounted in said side support and provided with a coupling-arm and a locking-arm, a recess in the side support to receive the locking-arm of the coupling-hook, a lateral offset on said locking-arm, a

transverse aperture through the side support, into which the said offset is adapted to engage, a longitudinally-sliding locking-latch seated in the draw-head and provided with a gravity-dog to keep it normally projected, and uncoupling-levers projecting with their inner ends beneath the gravity-dog, substantially as described.

2. In a car-coupling, the combination of a coupling-hook pivotally secured to swing in a vertical plane and provided with a locking-arm extending rearwardly in the closed position of said hook, and a draw-head cut away at one side and extended forward to form a side support in which the coupling-hook is mounted, a recess in the inner face of the side support of the draw-head to receive the locking-arm of the coupling-hook, a horizontally-sliding latch seated in the center of the rear portion of the draw-head and adapted to project beyond the curved rear extension of the locking-arm of the coupling-hook to lock the same in position, a gravity-dog engaging into said latch to keep it normally projected, and an uncoupling-lever adapted to lift said gravity-dog, and thereby withdraw the latch, substantially as described.

3. In a car-coupling, the combination of the draw-head mounted to have a lateral play to one side of the line of draft, and provided at its forward end with a solid abutment on one side and a side support for the coupling-hook on the other side, the coupling-hook pivotally mounted in said side support, and provided with a laterally-extending coupling-arm and a rearwardly-extending locking-arm, the locking-latch of the coupling-hook, and a sliding guard backed by a buffer-spring and secured independently of the draw-head upon the coupling side thereof, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 8th day of January, 1888.

JOHN SKINNER.

Witnesses:

JAS. WHITEMORE,  
P. M. HULBERT.