

(No Model.)

E. LATHAM.
CAR COUPLING.

No. 420,014.

Patented Jan. 21, 1890.

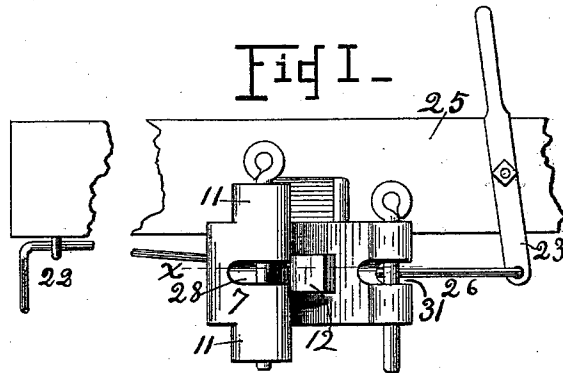


Fig II -

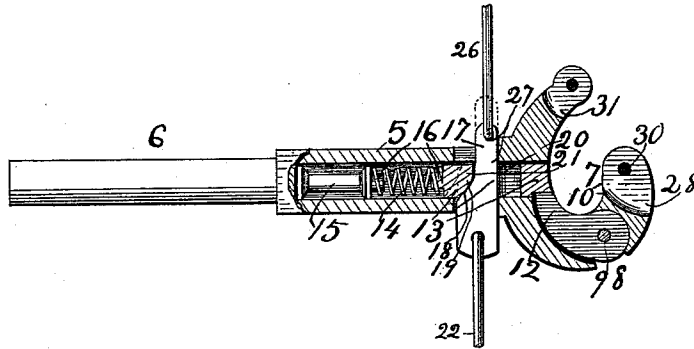
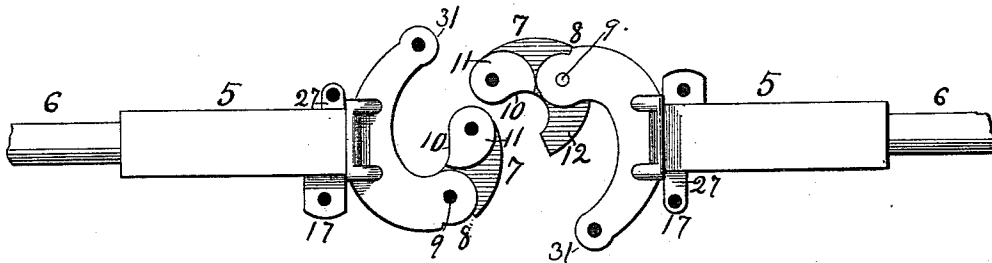


Fig III -



WITNESSES

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 420,014, dated January 21, 1890.

Application filed December 2, 1889. Serial No. 332,225. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIM LATHAM, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in 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 automatic car-couplings; and its general object is to provide means whereby two cars may be set to couple when they come together, or they may be so set as not to couple.

The objects, more in detail, are, first, to provide a hook-coupling with means for maintaining two hooks in engagement, even though there be a considerable difference in the level of the two draw-bars; second, to give the hook-retain a solid safe rest while in service; third, to provide means for coupling the same draw-bar by a common link and pin, and auxiliary means for again coupling with the link and pin if the hook should be broken, and, fourth, to provide means for releasing the hook and for preventing its being re-engaged when not desired.

To this end my invention consists in the construction and combination of parts forming an automatic car-coupling, hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure I is an end view of my car-coupling, showing also some of the adjacent portions of a freight-car. Fig. II is a horizontal section of the same coupling at the line X, Fig. I, with the jaw closed; and Fig. III is a view looking on top of two of my couplings ready to come into engagement.

5 represents the draw-bar, made hollow, as usual, and provided with the usual king-bolt 6, extending rearward.

7 is the coupling-hook, hinged at 8 in a slot in the head of the draw-bar on a vertical hinge-pin 9.

10 is that portion of the hook which engages a similar portion of another hook in service, and it may be termed the "jaw." This jaw has projections 11 extending both above and below the general plane of the draw-head

for the purpose of retaining its hold of the opposite jaw when there is a considerable difference in the level of the draw-heads.

12 is the trip-arm of the hook.

13 is the guard fitted to slide longitudinally in the draw-bar, and it engages the trip-arm 12 to hold the hook in service.

14 is a spring constantly impelling the guard forward.

15 is a plug fitted freely into the draw-bar to fill up the length thereof behind the spring 14, and reduced in size midway for sake of lightness. It serves as a base for the spring to push against. The forward end of the plug 15 and the rear end of the guard 13 are each provided with an extending stud 16 to enter the spring and maintain it in line and free from wear upon the sides of the draw-bar.

17 is a wedge fitted through a transverse mortise in the guard and in the draw-bar, the wedging-edge 18 acting against a rounded or wedge-shaped shoulder 19 of the guard 13 to draw the guard backward against the pressure of the spring 14, while the straight edge slides against the draw-bar, and 20 is a portion of the wedge having parallel sides adapted to rest upon the parallel edge 21 of the guard to hold the same retracted as long as may be desired. The wedge may be provided with a direct-acting handle 22, whereby it may be pulled and pushed through the guard in operation; but I prefer the hand-lever 23, pivoted to the dead-wood 25, and extending above it far enough to be readily seized by hand.

26 is a rod connecting the wedge with the said lever at a point below the dead-wood in order that when the draw-bar slides out and in the said connection may not be interfered with. The straight portion 27 of the wedge 17 prevents the guard 13 from being pushed out of its bearing by the spring when not in service, and it stops the guard with the front end thereof just flush with the adjacent portions of the draw-head, so that no portion of it projects to be broken off.

28 represents a mouth in the coupling-hook adapted to receive a common link, and 30 a hole for the usual coupling-pin. These are to be used whenever an old style of draw-bar has to be coupled with this one.

31 is a similar mouth in the solid body of the draw-head adapted to receive the usual link, so that the car may be drawn to the yard for repairs if the coupling-hook should
5 be broken.

In operation it is only necessary that one of the hooks to be coupled should be set open, as shown in Fig. III. To do this, first release the trip-arm 12 of the hook by pulling
10 the wedge 17 far enough to withdraw the guard 13 from the circular path of the said arm, and then swing the hook 7 to one side. Now release the wedge and the guard will be returned by its spring 14 to its normal
15 position. Then, when the opposite hook meets this one, it will push the arm 12 backward and swing the hook into engagement with the newly-entered one. At the same time the arm 12 will push directly upon
20 the front end of the guard 13, moving it back out of the way until the hook is seated, when the guard will swing forward beside the end of arm 12 and hold the hook for service. This proportioning the parts so that
25 the guard may rest its back at 32, opposite to the contact-face of the guard and arm 12, directly against a solid portion of the draw-head, is an important feature. Thus supported the guard cannot be broken. It is
30 also considered very important that the arm 12, when in service, is buried in flush with the draw-head. By this construction it is impossible for the entering hook to break the arm 12, because it will be easily pushed back
35 into its recess until the entering-hook abuts against the draw-head above and below it. To release a hook so that two cars will be pulled apart, draw in the wedge 17, and to hold the parts free so that two hooks will not
40 couple if brought together, draw in the said wedge until its parallel portion 20 rests on the ledge 21, and so leave it holding the guard drawn in.

Having thus fully described my invention, what I believe to be new, and desire to secure
45 by Letters Patent, is the following:

1. The combination, in car-couplings, of a hollow draw-bar slotted in its front end, a coupling-hook hinged in the said slot and
50 provided with a trip-arm, and a guard fitted to slide longitudinally in the draw-bar into the path of the said trip-arm, the front faces of the trip-arm and of the guard being flush with the adjacent portions of the draw-head when set for service and filling the mouth
55 thereof, substantially as shown and described.

2. The combination, in car-couplings, of a hollow draw-bar having a hole transversely through it, a coupling-hook hinged in the
60 draw-bar, a guard fitted to slide longitudinally in the draw-bar into the path of a portion of the said hook and provided with a hole transversely through it, having one side wedge-shaped part way across and straight
65 the rest, a wedge fitted to slide through the said transverse holes in both draw-bar and guard, the said wedge having parallel sides at each end of its wedging portion, and means for moving the wedge, substantially as shown
70 and described.

3. The combination, in car-couplings, of a draw-head, a coupling-hook hinged therein and provided with a mouth and pin-hole to receive the common link and pin, the said
75 draw-head being also provided with another mouth and pin-hole to receive the common link and pin into the solid portion of the draw-head in case the hook becomes broken, substantially as shown and described.

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

EPHRAIM LATHAM.

Witnesses:

WM. H. DE LACY,
W. X. STEVENS.