

(No Model.)

J. S. BOYD.
CAR COUPLING.

No. 553,506.

Patented Jan. 28, 1896.

Fig. 1.

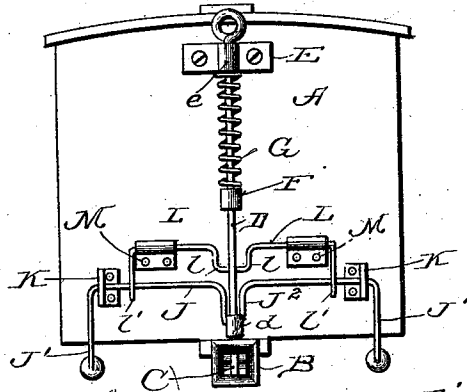


Fig. 2.

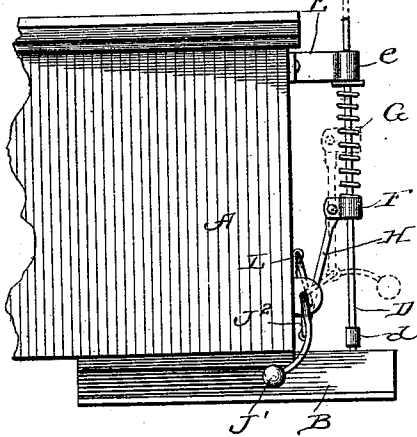


Fig. 3.

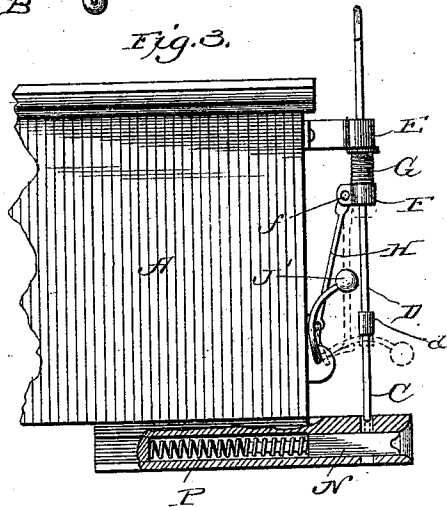


Fig. 4.

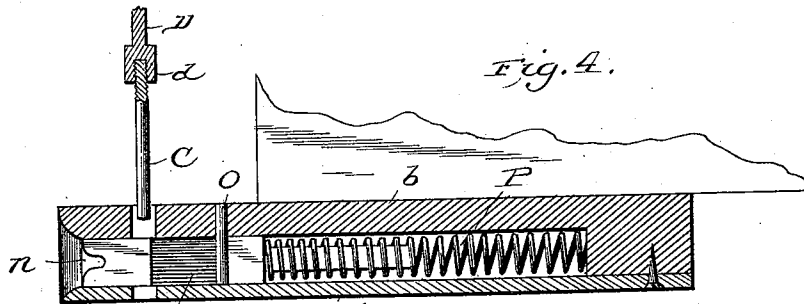
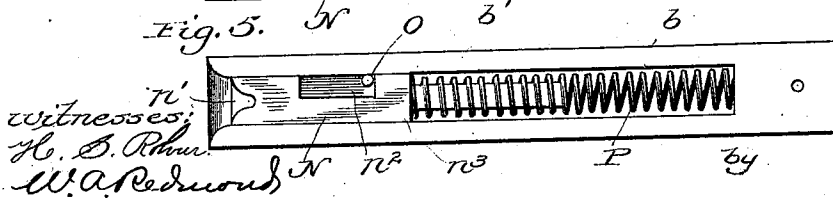


Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES S. BOYD, OF GREENVINE, TEXAS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 553,506, dated January 28, 1896.

Application filed May 28, 1895. Serial No. 550,929. (No model.)

To all whom it may concern:

Be it known that I, JAMES S. BOYD, a citizen of the United States, residing at Greenvine, in the county of Washington and State of Texas, have invented certain new and useful Improvements in Car-Couplers; 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.

My invention relates to car-couplers of the link-and-pin type which couple automatically and are provided with unlocking-levers operated from the top and side of a car, and designed to avoid the necessity of passing between the cars to couple or uncouple the same.

It is my object to provide an improved car-coupler of this description the several parts of which can be readily replaced when worn or broken, and one which shall be easily operated.

It is also my object to provide a coupler of this description with means for rendering the same non-automatic in action when it is desired to back and shift the cars without coupling the same.

In the accompanying drawings, forming a part of this specification, Figure 1 is a front elevation of the end of a box-car, showing my coupler and its attachments applied and coupled with a link. Fig. 2 is a side elevation of the same. Fig. 3 is a side elevation, partly in section, showing the position of the parts when the coupling-pin is stayed from automatic coupling. Fig. 4 is a vertical central section of the draw-head, and Fig. 5 a bottom plan view of the same with the detachable bottom removed.

Referring more particularly to the drawings, A denotes the car-body.

B denotes a draw-head having jaws which are perforated in the usual manner to receive the coupling-pin. The draw-head may be formed integral with the draw-bar and consists of two pieces *b b'*. The upper piece, *b*, is of an inverted-trough shape, and the lower piece, *b'*, forms a bottom cover for the same, and to which it is fastened by screws.

C denotes a coupling-pin, screw-threaded at its upper end or head.

D denotes a vertical rod extending upward the height of the car-roof and terminating in a rounded end or handle.

d denotes a sleeve rigidly secured to the lower end of the rod D and projecting below the same, its interior wall being screw-threaded to engage with the head of the coupling-pin. Thussaid rod forms a vertical extension of the coupling-pin and places it within reach from the roof of the car.

E denotes a bracket secured to the upper end of the car-body and provided with a projecting guide *e*, on which the rod D is loosely mounted.

F denotes a lug rigidly secured to the rod D. G denotes a coiled spring mounted on said rod and confined thereon between said lug and guide. H denotes an arm pivoted at its upper end to said lug by pin *f*. The lower end of said arm is journaled to a double crank *J*² formed by a bend in a rock-shaft J. The length of the arm H should be sufficient when raised to clear the lower end of the coupling-pin from the jaw of the draw-head, but not to disengage said end from the perforation in the upper side of said jaw, as it serves as an auxiliary guide, as hereinafter described, in directing the fall of said pin. The rock-shaft J is journaled in brackets K K mounted upon the lower end of the car-body and extends horizontally across the same nearly the width of the car. The ends of said shaft project upon each side of said brackets and are bent outwardly and downwardly in the arc of a circle, forming hand-levers *J' J'* for operating said rock-shaft, as hereinafter described.

L L denote triggers journaled in brackets M M, secured to the car-body upon each side of the double crank *J*², as shown in Fig. 1. Said triggers are each formed in one piece and consist of a short rock-shaft having upon its inner end short crank-arms *l*, which normally lie behind the double crank *J*², while its outer end is bent at right angles and extends downwardly, forming hand-levers *l' l'* for operating said trigger to force outwardly the double crank for the purposes hereinafter described.

It will be seen that the pin C and rod D form together an elongated vertical coupling-pin of the sections held in vertical relation

to the perforations in the draw-head by the guide *e* from above and the perforation in the upper jaw of the draw-head from below.

N denotes a spring-actuated block. The face of said block is dished and provided with a horizontal groove *n*, in which fits the link and two short vertical grooves *n' n'*, which register with the coupling-pin. The center of said block is provided with a recess *n*². The rear end is rounded, tapering, and provided with a shoulder *n*³.

O denotes a pin rigidly fastened to the upper inner wall of the draw-head and projects downwardly in said recess *n*², and serves to limit the forward and backward movement of said sliding block. P denotes a coiled spring threaded over the tapering end of said block and extending back to the rear end of the draw-head, against which it bears. Said block is forced outwardly by the tension of said spring into the jaws of the draw-head, in which position it supports the coupling-pin on its upper surface and prevents it entering between the jaws of the draw-head. The coupling-pin when set for coupling, as hereinafter described, rests in this position until the link of an approaching car enters the jaws of the draw-head and forces the spring-block back, when it is caused to pass between the jaws of the draw-head and engage with the link.

My coupler and its attachments operate as follows: The coupling-pin and its attachments being in the position shown in Fig. 3, when it is desired to set the coupling-pin to automatically couple with the link of the approaching car, the hand-levers *l' l'* are operated from either side of the car by pressing them upwardly. This causes the trigger-arms *l' l'* to turn outwardly and throw the double crank *J*² forward until it carries the arm *H* past the dead-center, when the coiled spring *G* presses down upon the lug *F*, secured to the vertical rod, and forces the coupling-pin in contact with the upper side of the sliding block. As the link of the approaching car strikes the face of the sliding block, said block recedes and the coupling-pin, partly by its own weight and that of the vertical rod and partly by the action of the coiled spring, is carried down and passes through the perforations in the jaws of the draw-head and engages with the link. When it is desired to uncouple the cars it can be accomplished from the roof of the car by pulling up the vertical rod, thus elevating the same and the coupling-pin, or the rod and pin may be elevated from either side of the car by raising the hand-levers *J' J'*. Either operation lifts the pin, releases the link, and allows the spring-actuated block to be again pressed forward. Should it be desired to stay the coupling-pin in the position shown in Fig. 3 and prevent the automatic

action of the coupler, the hand-levers are forced upward in the position shown in Fig. 3. This turns the double crank on the rock-shaft upward and causes the rod *H* to further compress the coiled spring *G* until said crank passes the dead-center, when the action of the spring will cause said arm to force the crank back and hold it against the car-body. In this position the actuating-levers *J' J'* are swung upwardly out of reach of a person standing on the ground, and to obviate this objection I supply the triggers *L L* with downwardly-extending hand-levers *l l*, which are within reach of such person and enable him by throwing up the levers *l l* to thrust forward the crank and thus set the pin *C* in position for automatic coupling.

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

1. In an automatic link and pin car coupler the combination of the coupling pin formed in detachable sections and extending to the car roof, a guide for supporting said pin in vertical relation to the perforations in the draw head, the coiled spring mounted on said pin and actuated to press the pin into the draw head, the rod *H* pivoted to said pin and journaled to a double crank formed in a horizontal rock shaft, the rock shaft extending to each side of the car and provided with hand levers for operating the same and the sliding block *B*.

2. In an automatic link and pin car coupler having the coupling pin supported by a spring actuated sliding block the combination of the coupling pin, the vertical rod secured to the head of said pin and extending to the car roof, a guide for supporting said rod, the coiled spring mounted on said rod and actuating the same to press said pin into the draw head, the rod *H* pivoted to said vertical rod and to a crank attached to the car body and actuated by said coiled spring to stay said crank against the car body and the pin from entering between the jaws of the draw head.

3. In an automatic link and pin car coupler, the combination of the elongated coupling pin, a guide for supporting the same, the coiled spring mounted on said pin, the rod *H* pivoted to said pin and to a double crank secured to the car body, and the trigger for operating said crank provided with hand levers operated from either side of the car substantially as shown and described.

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

JAMES S. BOYD.

Witnesses:

R. P. BOYD,
D. C. LUDING.