(No Model.) 3 Sheets—Sheet 1.

J. H. BROWN.

CAR COUPLING.

No. 458,144. Patented Aug. 18, 1891.

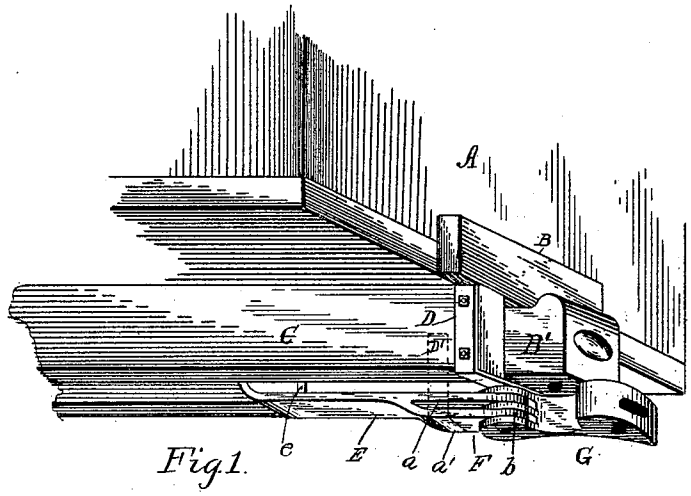


Fig. 1.

Fig. 2.

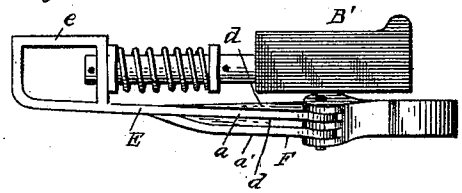
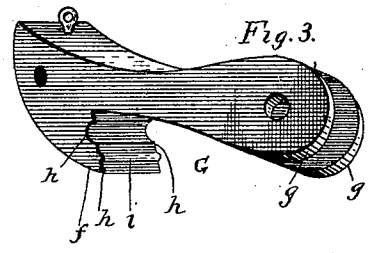


Fig. 3.



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Fig. 4.

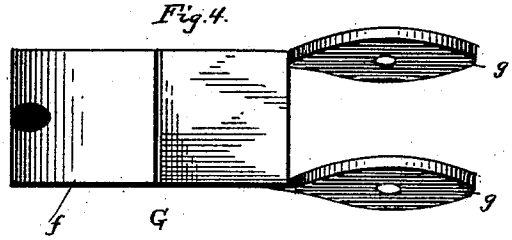


Fig. 5.

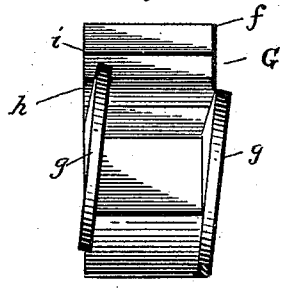


Fig. 6

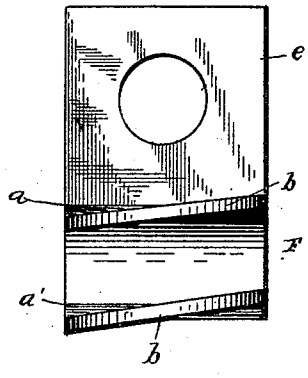
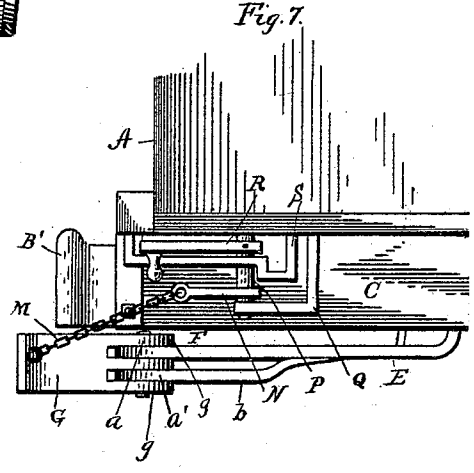


Fig. 7.



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J. H. BROWN.

CAR COUPLING.

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Fig. 8.

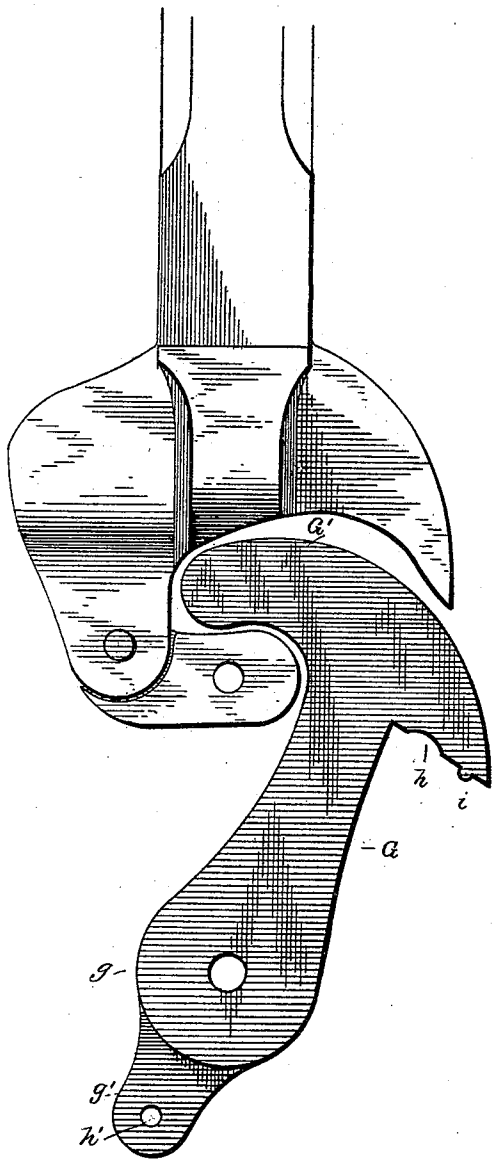
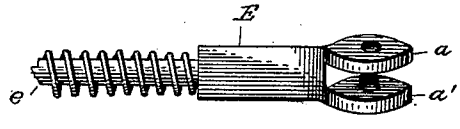


Fig. 9.



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UNITED STATES PATENT OFFICE.

JAMES HOYT BROWN, OF DENVER, COLORADO, ASSIGNOR TO THE J. HOYT BROWN AUTOMATIC CAR-COUPLER AND RAILROAD SUPPLY COMPANY, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 458,144, dated August 18, 1891.

Application filed October 14, 1890. Serial No. 368,134. (No model.)

To all whom it may concern:

Be it known that I, JAMES HOYT BROWN, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Automatic 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.

This invention relates generally to car-couplers, and particularly to that class of devices commonly known as "twin-jaw" car-couplers; and it has for its object to provide a simple, durable, and automatic coupler of the class named, adapted to be attached to a car equipped with the ordinary link-and-pin car-coupler in order to adapt the same for automatic coupling without in any manner interfering with the use or operation of the link-and-pin coupling attached to the same or an adjacent car; and it consists, first, in providing a draw-head having a bend or twist therein at an angle to the body of the draw-bar; second, in providing a jaw the arms of which are bent or twisted to one side at an angle to the body of the jaw in a manner corresponding to the draw-head; third, in providing said jaw with a hook having vertical ridges and corrugations adapted to fit similar corrugations and ridges formed on the hook of an adjacent coupler; fourth, in providing a double-hooked jaw adapted to interlock with various styles or types of couplers; fifth, in providing a draw-bar adapted to be attached to the ordinary link-and-pin coupling draw-bar, and, sixth, in other details of construction and arrangement, as hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a perspective view of the end of a car having my improved coupler attached to the ordinary link-and-pin coupling; Fig. 2, a side elevation of an ordinary link-and-pin coupling and my coupler attached thereto; Fig. 3, a perspective view of my improved jaw; Fig. 4, a side elevation taken from the front or hook side of the jaw. Fig. 5 is an end elevation of the jaw. Fig. 6 is an end elevation of my improved draw-bar. Fig. 7 is a side elevation of the end of a car, showing my coupler attached to the link-and-pin coupling and the means for uncoupling the same. Fig. 8 is a plan view of my double-hooked jaw interlocked with a jaw of the Janney or Hinson type, and Fig. 9 a side elevation of a modified form of draw-bar for passenger-service.

Similar letters refer to similar parts throughout the several views.

A represents the end of a railway-car having my improved coupler attached thereto in connection with an ordinary link-and-pin coupling.

B is the dead-wood or end beam secured to the end of the car, as usual, and C the draft-timbers extending from the end of the car along its bottom portion and secured thereto in the usual or any desired manner. Between the draft-timbers the usual follower-plates are arranged and a spring or springs inserted between them, as is customary, through which and the plates the stem of the draw-bar B′ passes in the usual manner, said draw-bar being supported in place by the iron stirrup D, secured to the draft-timbers.

In the above description is set forth the main features of the link-and-pin car-coupling now generally in use, so far as the draw-bar and its parts are concerned, and to such a coupler or couplers of the general type described I attach my improved coupler in order to render the coupling of cars equipped with such old-style couplers automatic without at all interfering with the operation or arrangement of the parts of the coupler described above.

E represents the draw-bar of my improved coupler having formed therewith a draw-head F, which carries the swinging jaw G. The draw-bar is formed, preferably, of one piece of metal, and consists of the arms *a a′*, the latter extending downwardly at an angle from the former for a short distance, and then forwardly parallel with said arm *a*, both arms terminating in the rounded or semicircular-shaped perforated bearings *b*, which form the

draw-head F, to which is pivoted the swinging jaw G. The ends of the arms *a a'* are bent or twisted, as at *d*, (see Fig. 2,) so that the bearings *b* incline from a true horizontal line and to the bodies of the arms. The bend or twist of both bearings is in the same general direction and may be formed in casting the arms, or the arms may be cast straight and of sufficient thickness to permit of the inclination of the bearings being formed by filing or grinding, as desired. The other end of the draw-bar is formed L-shaped or cast with a perforated projection or stop *e*, which projects upwardly at right angles to the body of the draw-bar and is adapted to be inserted between the draft-timbers behind the rear follower-plate, and the stem of the draw-bar B' is inserted in the perforation in said projection, so that the draw-bar E may have free longitudinal motion or play when in use. Suitable stirrups D', one of which is indicated in dotted lines in Fig. 1, are secured to the draft-timbers in order to support draw-bar E in place immediately beneath draw-bar B'. As shown, the projection *e* on the end of draw-bar E is cast hollow and the end of the stem of draw-bar B' extends therein; but it may, if desired, be formed or cast solid and considerably shorter, making it resemble the letter L; but it is believed that the construction first described, combining, as it does, lightness in weight and great strength, will be found most satisfactory in practical operation.

G represents the swinging jaw, on one end of which is formed the hook *f* and on the other end the perforated arms or plates *g*, said plates or arms being arranged or cast one above the other and being twisted or bent in the same general direction at an angle from a true horizontal line to correspond with the ends of the arms *a a'* of the draw-bar E, over which they fit and to which they are pivoted by a bolt or pin passing through their perforations and the perforations formed in the ends of said arms, as clearly shown in Figs. 1, 2, and 7. Owing to this construction of the ends of the arms and the plates *g*, the swinging jaw will, through its own weight, gravitate toward a central position after being drawn to one side, thus insuring its always being in proper position to form a coupling with the adjacent car without the use of a spring or other device to return it to a position for coupling. A chain M is employed, as will be described hereinafter, to draw the jaw to one side to uncouple, and it acts also to limit the swing of the jaw and retain the same in a central position—that is, in line with the draw-bar. There may be, if desired, three arms or plates *g*, as shown in Fig. 2, the central one being adapted to enter between the arms *a a'*, and is fastened pivotally therein by the same pin which secures the parts together.

The hook *f* of jaw G is formed with a semicircular outer face, with the end of the arc beginning on the back side near the line of draft and curving sharply inward to form the hook, and the inner surface of the hook is formed with corrugations *h* and a ridge or projection *i*, adapted to fit within corresponding corrugations and ridges on the hook of the adjacent coupler, thereby preventing the hooks accidentally slipping one off the other in rounding curves. Thus it will be observed that I adapt cars already provided with link-and-pin couplings for automatic coupling by attaching my improved coupler thereto without additional springs and without interfering in any manner with the use or operation of the link-and-pin coupling.

It frequently happens that it is necessary to push uncoupled cars from point to point in making up trains, and when such cars are provided with automatic coupling devices they immediately couple together when pushed one against the other, thus necessitating their being uncoupled before they can be shunted to one side or to a point removed from the other cars of the train. To obviate this objection to the use of automatic couplers on freight and other cars, I cast with the plates *g* an extension *g'*, having a perforation *h'* therein, through which a pin may be inserted into a corresponding perforation in the draw-bar E, and thus fasten the jaw G rigidly in line with the draw-bar and preventing the same forming a coupling with an adjacent automatic coupler and permitting the use of the same as a buffer in pushing cars. The pin which fastens the extension *g'* to the draw-bar must of course be removed when it is desired to couple cars together, thus permitting the free lateral swing of the jaws.

In Fig. 9 I show my improved coupler modified for attachment to new cars. In this view the draw-bar E terminates in a round stem *e'*, if cast solid, or the ordinary stem may be used therewith by reaming out the draw-head and inserting the stem therein, as is customary. The draw-head is cast, preferably, in one piece and is divided or formed with arms *a a'*, bent or twisted in all respects similar to the arms *a a'*, described above. This draw-bar is placed between the draft-timbers, as is usual, and operates the same as the ordinary draw-bar.

In Fig. 8 I show the jaw G formed with an additional hook G' on the side opposite the hook *f*. The hook G' is formed similar to the hook of the Janney or Hinson hook, and is adapted to operate with either of these hooks or the hooks of similar types of couplers, thus enabling a car equipped with my coupler to couple with any of the modern types of couplers in use as well as with the hook herein described.

In order to uncouple my coupler, I provide a chain M, which is attached at one end to the jaw G and at its other end to a lever or rod N, secured to a standard P, pivotally mounted in an angle-iron Q. A hand-lever R is pivotally secured to the standard and extends to

one side of the car, and by turning the same the lever N will draw out the chain, and thus uncouple the cars by pulling the jaw to one side. The hand-lever R is split or divided at the end and embraces the standard P, and is fastened to said standard by a pin, which permits the hand-lever to be raised and lowered, so that when the jaws are uncoupled and it is desired to hold them apart the lever may be dropped into the recess formed in the bar S, which forms a rest for said lever and prevents the jaw swinging back until the lever is raised out of the recess.

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

1. The combination, in a car-coupler, of the draw-bar having a projection or stop at one end and arms having perforated ends bent or twisted at an angle to the body of said draw-bar at the other end, and a swinging jaw having a hook formed with vertical ridges and corrugations at one end and perforated arms having a bend or twist at an angle to said jaw at the other end, substantially as described.

2. The combination, in a car-coupler, of the draw-bar having arms bent or twisted at an angle to said draw-bar, a swinging jaw having arms or plates bent or twisted at an angle corresponding to the arms of the draw-bar, and a perforated extension cast with said arms or plate, whereby said jaw may be locked rigidly in place, substantially as described.

3. The combination, in a car-coupler, of a draw-bar having arms with their ends inclined at an angle and a round stem, a swinging jaw having perforated arms formed with their ends inclined to the body of the jaw, and a double hook formed on the opposite end of said jaw and projecting therefrom at opposite sides, whereby said jaw may couple with a variety of types of automatic couplers, substantially as described.

4. The combination, with the draw-bar of a link-and-pin coupling, of a draw-bar having a stop at one end, arms having a bend or twist therein at the other end arranged below said first-named draw-bar and riding on its stem, and a jaw having arms bent or twisted at an angle at one end and a hook at the other end, substantially as described.

5. The combination, in a car-coupler, of the draw-bar having arms formed with inclined bearing-surfaces at their ends, a jaw having arms at one end formed with inclined bearing-surfaces corresponding with the bearing-surfaces of the draw-bar arms, a standard pivotally mounted in an angle-iron, a lever or rod secured to said standard, a chain connecting said rod and jaw, a hand-lever pivotally secured to said standard, and a bar having a recess for locking or detaining said hand-lever when the jaws are uncoupled, substantially as described.

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

JAMES HOYT BROWN.

Witnesses:
JONA. B. CILLEY,
H. B. ZEVELY.