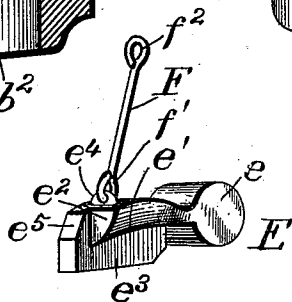
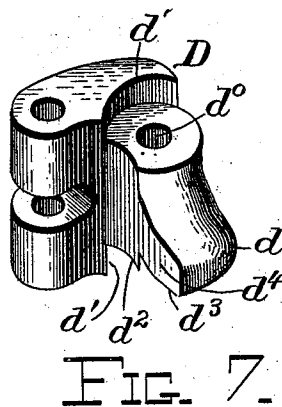
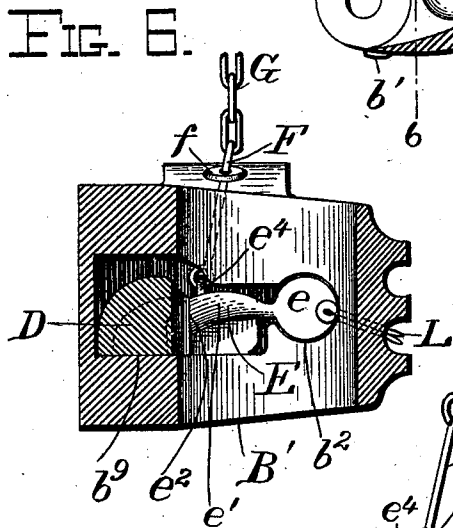
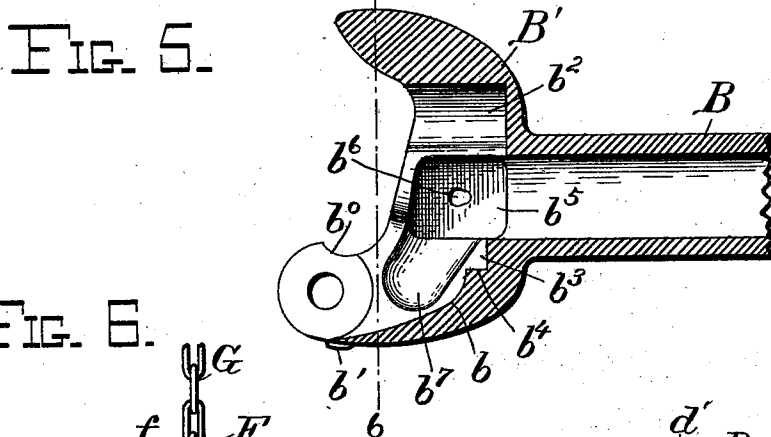
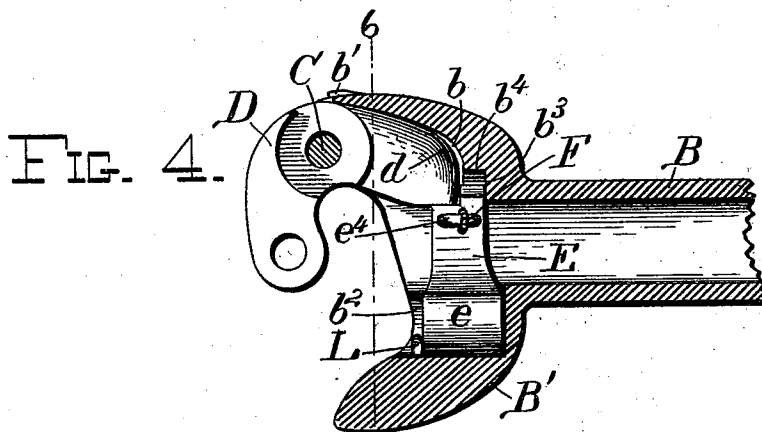


J. A. ROOSEVELT.
CAR COUPLING.

No. 554,538.

Patented Feb. 11, 1896.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES A. ROOSEVELT, OF FRANKLIN, PENNSYLVANIA, ASSIGNOR TO THE
FRANKLIN STEEL CASTING COMPANY, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 554,538, dated February 11, 1896.

Application filed October 3, 1895. Serial No. 564,529. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. ROOSEVELT, a citizen of the United States, residing at Franklin, in the county of Venango and State of Pennsylvania, 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.

My invention relates to improvements in car-couplings and especially to twin-jaw couplings of the Master Car-Builders' type; and the said invention consists of certain novel features hereinafter described and claimed.

Figure 1 represents a perspective view of one end of a freight-car fitted with my improved car-coupler. Fig. 2 represents a central vertical section through the car-coupler and front end of the car-body, and shows the manner in which the same is automatically uncoupled when the draw-bar is broken. Fig. 3 represents a similar section of the coupler to that shown in Fig. 2 with the knuckle in the locked position. Fig. 4 represents a horizontal section through the center of the draw-bar, showing the knuckle and latch in place, and representing the said knuckle and latch in plan. Fig. 5 represents an inverted view of the upper part of the draw-head, or that part that has been removed in the section shown in Fig. 4. Fig. 6 represents a section along the line 6-6 of Fig. 3, and looking to the right. Fig. 7 represents a perspective view of the knuckle as detached from the draw-head, and Fig. 8 represents a perspective view of the latch.

A represents the car-body, which may be either a freight-car, as shown, a passenger-car, or a car of any desired construction.

A' represents the dead-wood, beneath which the draw-bar is suspended in the usual or any desired way.

The tail of the draw-bar and its connections, not being a part of my present invention, will not be described herein.

The draw-bar B is provided with a draw-head B' of the Master Car-Builders' type, between the jaws of which swings the pivoted

knuckle D upon the pivot-pin C, while the said knuckle is automatically locked when in the closed position by the gravity-operated latch E, which latch may be either lifted from above or from beneath, as will be hereinafter described.

The draw-head B' is provided with a curved recess *b*, in which the tail *d* of the knuckle D fits snugly when the said knuckle is in the closed position, and thus the buffing strains are transferred from the pivot-pin C to the main body of the draw-head, and thus a frequent source of delay and accident is avoided.

On the exterior of the pivot-arm of the draw-head are lugs *b'* adapted to limit the outward swing of the knuckle and thus prevent the same from being thrown outward to such a position that the buffing strains would tend to swing the knuckle farther open instead of tending to close the same.

The horn of the draw-head carrying the pivot-pin is cut away slightly, as at *b⁰* in Fig. 5, in order to allow the nose of the engaging knuckle to project therein. The opposite side of the draw-head is provided with a chamber *b²* which is nearly cylindrical and is adapted to receive the rounded head *e* of the latch E. The opposite horn of the draw-head has a flat face *b³* terminating in a rectangular shoulder *b⁴*, adapted to support the back of the web *e³* of the latch E against pressure from the front of the draw-head, which support is needed when two cars buff together and the knuckle swings in with considerable velocity. Also when a link-and-pin coupling is used with this draw-head and the link is jammed back when the two cars buff together, striking the latch with great force, the said latch is firmly supported from the rear, and is thus protected against being broken by the link.

The upper portion of the draw-head is provided with a chamber *b⁵* having an elongated aperture *b⁶*, through which passes the lifting-rod F. This aperture *b⁶* is kept free from snow and dirt by means of a sliding cover *f* loosely mounted on the rod F, as shown in Figs. 2, 3, and 6.

The parts of the interior of the draw-head which do not furnish needed bearing-surfaces may be hollowed out for the sake of lightness, as shown at *b⁷* in Fig. 7, if desired.

The lower side of the cavity in the draw-head is provided with horizontal supporting-faces b^8 and b^9 , about which the base of the knuckle, formed by the corresponding faces d^2 and d^3 , swings about the pivot-pin C. The lower side of the draw-head may also be provided with an opening b^{11} for the web of the latch, and to admit the passage there-through of the tripping-lever M, which is pivoted on the pin m in the lugs b^{12} and operated by the hand-rod N leading to the side of the car, as fully described in my patent granted May 22, 1894, and numbered 520,380; but this perforation b^{11} and these lugs b^{12} with the means for lifting the latch from beneath are not necessary and may be omitted, if desired, and the latch may be lifted from on top, as will be hereinafter more fully described.

The knuckle D is perforated, as at d^0 , to receive the pivot-pin C, and is provided with cylindrical shoulders d' , which project some distance on either side of a line drawn parallel to the axis of the car and passing through the center of the pivot-pin. The purpose of these prolonged shoulders is to add strength to that part of the knuckle which first receives the shock due to buffing strains when two cars come together. The upper side of the tail d of the knuckle is rounded, as shown in Fig. 7, and this rounded portion strikes underneath the corresponding rounded portion e' of the latch, causing the same to lift up and allow the tail of the knuckle to pass therebeneath. As soon as the face d^4 of the tail of the knuckle passes behind the face e^2 of the latch, which face e^2 is at right angles to the rounded portion e' , the latch drops and this face e^2 abuts against the face d^4 of the knuckle, holding the same firmly locked. The latch E may be lifted either by means of the tripping-lever M, already described, or by means of the rod F pivotally connected to the lug e^1 on the top of the latch, as shown in Figs. 2, 3, 6, and 8. I ordinarily prefer this mode of lifting the latch, since most cars are now provided with the overhead lifting-bar H, having hand-crank h and lifting-arm h' , connected to the lifting-chain G, as shown in Fig. 1. This rod F is preferably set at a slight angle backward, as shown in Figs. 2, 3, and 6.

Where the latch is lifted from beneath, as shown in Figs. 2 and 3, the chain G may be connected to a plate K or to any other part of the car-body. It will be seen that where this chain G is connected to the car-body or any part carried thereby and the rod F slopes backward, as shown, then if the draw-bar breaks or the tail-bolt is carried away and the draw-head is pulled outward, as indicated in Fig. 2, the chain G will lift the latch, allowing the knuckle D to swing open and release the broken draw-head from engagement with the opposite draw-head, while the said broken draw-head will hang down at the end of said chain, and thus the accidents due to

broken draw-heads falling on the track will be obviated.

The latch E is held against slipping out forward by means of the cotter-pin L, (see Figs. 4 and 6,) which passes through the horn of the draw-head just in front of the cylindrical portion of said latch. The latch is cut away, as at e^5 , to allow the free end of the same to swing up in the hollow draw-head.

The lifting-rod F has an eye f' bent in the lower end thereof, which is permanently attached to the latch, and the end f^2 of the rod is shoved into place through the aperture b^6 from beneath when the latch is inserted.

The snow-guard f may either be slipped on before the eye f^2 is bent in the rod or it may be provided with an elongated slot large enough to pass said eye therethrough.

By having the lift from the latch in the form of a round rigid rod instead of a chain the rod will move freely outward and inward, whereas the chain would bind, might get kinks in it, and would not be so reliable in its action. Moreover, if the rod is bent in pulling up the latch, whether bent backward or forward or sidewise, it will still operate and unlock the knuckle. An angular bar would be likely to be twisted or bent in the aperture through which it passes.

It will be seen that by the herein-described construction I provide a draw-head which is exceedingly strong and capable of withstanding heavy buffing or hauling strains, in which the parts are few and simple and readily replaced by like parts in case of injury, in which a broken draw-head is uncoupled and supported without falling on the track, in which the latch may be lifted either by the lifting appliances now most commonly in use or by special appliances provided for the purpose, and in which the chamber of the draw-head is kept clear of snow, cinders, and other solid matter. These and the various other advantages of the herein-described construction will readily suggest themselves to any one skilled in the art.

It will be obvious that various modifications of the herein-described structure might be made which could be used without departing from the spirit of my invention.

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

1. In a twin-jaw coupling, the combination with a hollow draw-head provided with an elongated slot therein in rear of and above the latch, of a pivoted knuckle, provided with a tail rounded on the upper and outer side thereof, and adapted to swing into the hollow portion of said draw-head and provided with a vertical bearing-surface on the inner side thereof, a gravity-operated latch pivoted transversely in said draw-head and having a convex tripping-surface, adapted to be engaged by the tail of the knuckle, and a vertical holding-surface adapted to engage the

vertical bearing-surface on the tail of the knuckle when the same is in the closed position, a rod connected to said latch and leading upward and to rear through said slot, and
 5 a sliding cover loosely mounted on said rod and adapted to cover said slot, substantially as described.

2. In a twin-jaw coupling, the combination with a hollow draw-head provided with an
 10 elongated slot therein in rear of and above the latch, of a pivoted knuckle, provided with a tail rounded on the upper and outside thereof, and adapted to swing into the hollow portion of said draw-head, and provided with a
 15 flat bearing-surface on the lower side thereof, supported by said draw-head, a gravity-operated latch pivoted transversely in said draw-head and having a lower convex tripping-surface, adapted to be struck by the rounded
 20 portion of the tail of the knuckle, and a vertical holding-face adapted to fall behind and engage the tail of the knuckle when the same is in the closed position, a rod connected to
 25 said latch and leading upward and to rear through said slot, and a sliding cover loosely mounted on said rod and adapted to cover said slot, substantially as described.

3. In a car-coupling, the combination with a hollow draw-head having an elongated slot
 30 in the upper portion thereof, of a knuckle swinging in said draw-head, a gravity-operated latch mounted in said draw-head, a rod connected to said latch and passing at an incline upward and backward through said
 35 elongated slot, a sliding cover loosely mounted on said rod and adapted to cover said slot, and means for connecting said rod to some part carried by the car, substantially as described.

40 4. In a car-coupling, the combination with

a hollow draw-head having an elongated slot in the upper portion thereof, of a knuckle swinging in said draw-head, a gravity-operated latch mounted in said draw-head, a rod
 45 connected to said latch and passing at an incline upward and backward through said elongated slot, a sliding cover loosely mounted on said rod and adapted to cover said slot, a lifting-bar carried by the car, and a chain
 50 connecting said rod with said lifting-bar, substantially as described.

5. In a twin-jaw car-coupling, the combination with a hollow draw-head having an interior vertical bearing-face in the rear of said
 55 hollow portion, and a slot extending through the walls of the draw-head above said hollow portion, of a pivoted knuckle provided with a tail adapted to swing into the hollow portion of said draw-head, a gravity-operated
 60 latch pivoted transversely in said draw-head, and having a tripping-surface adapted to be engaged by the tail of the knuckle, a vertical holding-face adapted to engage the tail of the knuckle when the same is in the closed position, a flat back adapted to bear against said
 65 vertical bearing-face in the interior of the draw-head, and a lug with an eye therein on the upper side of said latch, a rod connected to said eye and passing at an incline upward and backward through said slot, a sliding
 70 cover loosely mounted on said rod and adapted to cover said slot, and means for connecting said rod to some part of the car, and for lifting said latch, substantially as described.

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

JAMES A. ROOSEVELT.

Witnesses:

JOS. H. BLACKWOOD,
 JOHN C. WILSON.