No. 838,188. PATENTED DEC. 11, 1906.

F. IRWIN.

CAR COUPLING.

APPLICATION FILED JULY 17, 1905.

Fig. 1.

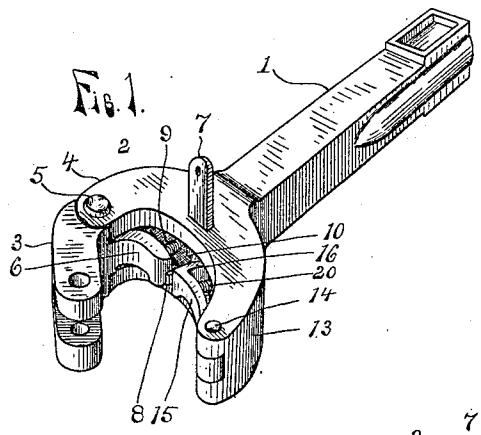


Fig. 2.

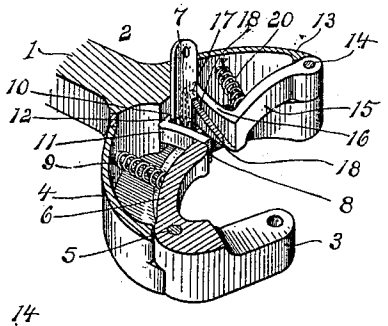
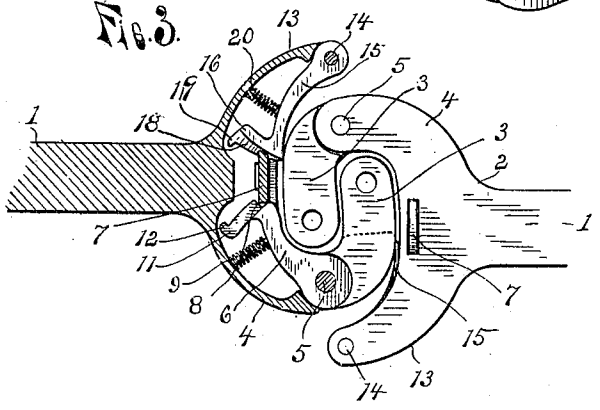


Fig. 3.



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CAR-COUPLING.

No. 838,188. Specification of Letters Patent. Patented Dec. 11, 1906.

Application filed July 17, 1905. Serial No. 269,932.

To all whom it may concern:

Be it known that I, FRED IRWIN, a citizen of the United States of America, residing at Detroit, in the county of Wayne 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 improvements in car-couplings of the class in which pivoted interlocking hooks similar to those employed in the "Janney" type of coupler are used; and its object is to provide the same with means for automatically raising and holding the locking-pin out of the path of the coupling-hook, so that said hook may be turned without being engaged and locked by the pin when operated by contact with a coupling or other means adapted to interlock therewith, said means being adapted to be operated to release the pin, so that it may engage and lock the hook only by the engagement of a coupling having a similar interlocking hook.

A further object of the invention is to provide a simple construction adapted for use with the ordinary and common Janney type of coupler and to provide certain other new and useful features in the construction, arrangement, and combination of parts, all as hereinafter more fully described, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a device embodying the invention, showing the coupling-hook in its unlocked or open position. Fig. 2 is a perspective view of the coupler-head with the upper half broken away to show the construction; and Fig. 3 is a plan view of two heads in their interlocked or coupled position, with one of the heads in section to show the internal parts.

As shown in the drawings, 1 is the draw-bar, and 2 the head thereon, both constructed and formed substantially the same as the ordinary Janney coupler.

3 is the usual coupling-hook, pivotally attached to the jaw 4 of the head by means of the pivot-pin 5 and provided with a locking-arm or tailpiece 6, which swings into and out of the head through an opening in the forward edge thereof when the hook is opened or closed. The vertically-movable flat locking-pin 7 is so supported in openings in the top and bottom of the head as to move freely therein and fall by gravity in front of the shoulder 8 on said locking-arm when the hook is forced inward against the action of a coiled spring 9 in the head between said arm and the wall of the head by the contact of said hook with a coupler on another car when the cars come together. The lower end of said pin is cut away at one side, so that when said pin is in its raised position the shoulder 8 will freely pass the pin, and a laterally-projecting shoulder 10 is thus formed on the pin to engage the shoulder on the arm when the pin is permitted to fall in front thereof and lock the hook in its closed position. An inwardly-extending curved finger 11 is provided on the end of said arm, and a lug 12 on the inner end of said finger projects laterally therefrom to engage the rear inner side of the pin when the hook is opened and form a stop to limit said outward or opening movement of the hook.

Pivoted at one end within the outer end of the jaw 13 of the head upon a pivot-pin 14 is a lifting-arm 15, having a curved end 16 extending inward adjacent to one edge of the locking-pin, which edge is formed with a shoulder 17 to engage the upper side of an upwardly and inwardly inclined ledge 18 on the face of the inwardly-extending end 16 of the arm. A lug 19 is provided on the inner end of said arm to engage the rear side of the pin when said arm is in the position shown in Fig. 2 and limit its outward movement, which outward movement is caused by a coiled spring 20, interposed between the rear side of said arm and the wall of the coupler-head.

When the hook is open or in uncoupled position, the locking-pin is held in its raised position by the engagement of its shoulder 17 with the high end of the incline on the lifting-arm 15, said arm having been forced outward by the spring 20, and therefore should the hook be turned to its closed position by any means other than an interlocking coupling coming into engagement therewith it will not be locked in said closed position by the pin, as means other than an interlocking coupling would not contact the lifting-arm and force the same inward at the same time that the hook would be operated thereby. The hook can therefore only be locked when

engaged by another coupling of this type, as the locking-pin will be held out of engagement with the shoulder on the locking-arm by the lifting-arm unless said lifting-arm is forced and held inward. Should the coupling-hook and lifting-arm both be turned by a coupler or other means not provided with an interlocking hook or other part to hold the lifting-arm pressed inward against the action of its spring, said spring would at once force the lifting-arm outward again and lift the pin, thus unlocking the hook. It is therefore clear that with this construction the coupler is always held in a position to engage a coupler of the same type, but cannot be thrown to a locked position by a coupler or other means not adapted to interlock therewith.

Having thus fully described the invention, what I claim is—

1. In a car-coupler, the combination with a coupler-head, a coupling-hook pivoted to said head and a locking-pin adapted to engage and lock the hook in its closed position, of an arm pivoted on the head and adapted to engage and hold the pin out of the path of the hook, and means for yieldingly holding the arm in a position to be engaged by another coupler to be operated thereby to release the pin and permit said pin to engage and lock the hook.

2. In a car-coupler, the combination with a coupler-head, a coupling-hook pivoted to said head and provided with an arm adapted to swing into an opening in the forward side of said head, and a locking-pin to engage said arm and lock the hook, of an arm pivoted in said head to swing from an opening in the forward side of said head and adapted to engage and hold the pin out of the path of the arm on said hook and to be engaged by the hook of a coupler and swing into the head to permit the pin to engage and lock the arm of said hook.

3. In a car-coupler, the combination with a coupler-head having an opening in its forward side, of a coupling-hook pivoted to said head at one side thereof, a locking-arm on said hook adapted to swing into said opening, a locking-pin movable vertically in openings in said head and adapted to engage said locking-arm at one side and provided with a shoulder at its opposite side, an arm pivoted to said head to swing into and out of said opening in the head and provided with an inwardly and upwardly extending incline to engage the shoulder on the pin, and a spring in the head to engage and force the said arm outward.

4. In a car-coupler, the combination with a coupler-head having laterally-extending jaws and an opening in its forward side, of a coupling-hook pivoted to one of said jaws, an arm on said hook adapted to swing into said opening, an inwardly-extending curved finger on the end of said arm forming a shoulder at the end of said arm, a vertically-movable locking-pin in openings in the head and cut away at one side near its lower end to allow the finger to pass and to form a shoulder to engage the shoulder on the arm, a lug on the inner end of said finger to engage the inner side of the pin and form a stop to limit the movement of said hook, and means carried by the jaw at the opposite side of the pin for holding the pin in its raised position and operated by contact with another coupler to release said pin.

5. In a car-coupler, the combination with a coupler-head having laterally-extending jaws and an opening in its forward side, of a coupling-hook pivoted to one of said jaws, a locking-arm on said hook adapted to swing into said opening and provided with a shoulder at its free end, a pin movable vertically in openings in the head and formed with a shoulder at one side to engage the shoulder on the arm and a similar shoulder at the opposite side, a lifting-arm pivoted at one end to the other jaw and adapted to swing into said opening in the head, a spring to normally hold said arm projected from the opening, an inwardly-extending curved end portion on said lifting-arm, an inwardly and upwardly extending incline on the face of said end portion to engage the shoulder on the pin and a stop on the end of said end portion to engage the inner side of the pin and limit the movement of said lifting-arm.

6. In a car-coupler, the combination with a coupler-head having laterally-extending jaws and an opening in its forward side, of a coupling-hook pivotally attached to the end of one of said jaws, a locking-arm on said hook adapted to swing into said opening, an inwardly-extending curved finger on the free end of said arm and forming a shoulder, a lug on the inner end of said finger, a coiled spring in the head interposed between said arm and wall of the head, a vertically-movable locking-pin guided in openings in the head and reduced at its lower end to permit the finger to pass at one side and to form a shoulder at the opposite side, a lifting-arm pivoted at one end to the outer end of the opposite jaw and adapted to swing into the opening in the head, an inwardly-extending curved end on said lifting-arm, a lug on the inner end of said end, an incline on the face of said end engaged by one shoulder on the pin, and a coiled spring in the head interposed between the inner side of said lifting-arm and the wall of the casing to normally hold said arm projected from the opening in the head.

7. In a car-coupler, the combination with a coupler-head, a coupling-hook pivoted to said head and a lock adapted to engage and

lock the hook in its closed position, of an arm pivoted to the head and adapted to engage and hold the lock out of the path of the arm on said hook and to be engaged by the hook of a coupler and swing into the head to permit the lock to engage and lock the arm of said hook.

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

FRED IRWIN.

Witnesses:
GEORGE J. CAMERON,
OTTO F. BARTHEL.