No. 646,174. Patented Mar. 27, 1900.

G. A. HERMANSON.

AUTOMATIC COUPLING FOR RAILWAY CARS.

(Application filed Oct. 30, 1899.)

(No Model.)

FIG. 1.

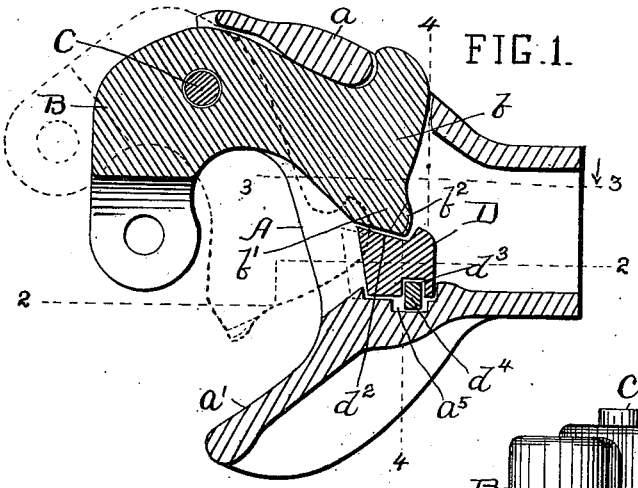


FIG. 2.

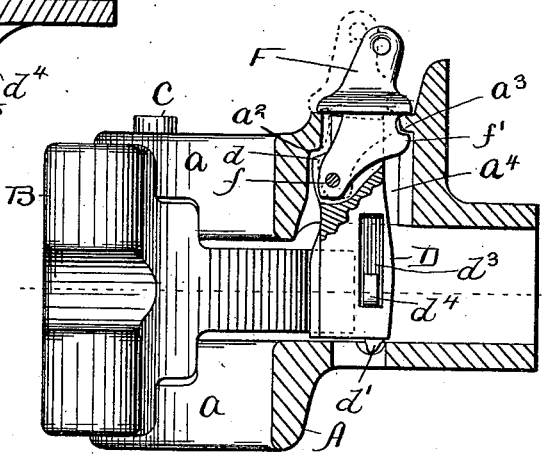


FIG. 3.

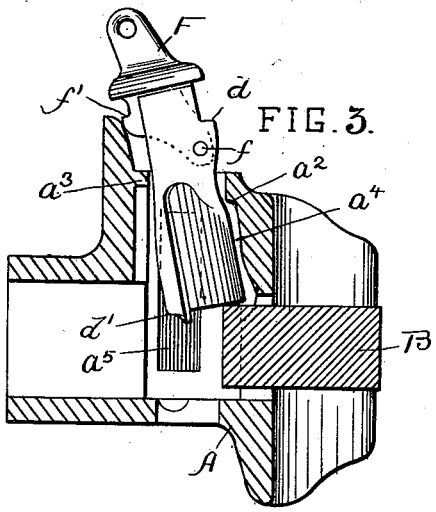
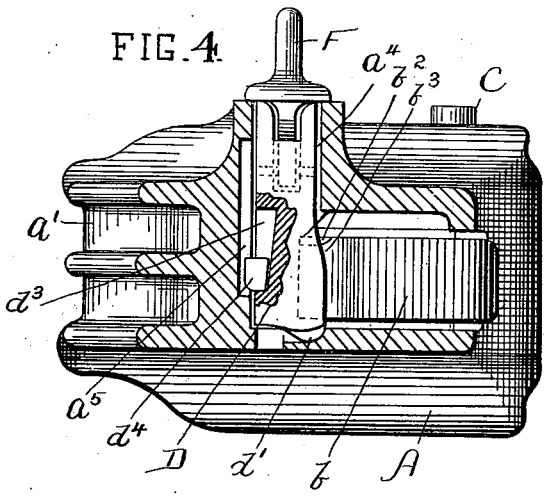


FIG. 4.



WITNESSES:

F. B. Townsend

A. M. Munday.

Gustaf A. Hermanson INVENTOR.

BY Munday, Evarts & Adcock.

his ATTORNEYS.

UNITED STATES PATENT OFFICE.

GUSTAF A. HERMANSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO JAMES MUNTON, OF MAYWOOD, ILLINOIS.

AUTOMATIC COUPLING FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 646,174, dated March 27, 1900.

Application filed October 30, 1899. Serial No. 735,154. (No model.)

To all whom it may concern:

Be it known that I, GUSTAF A. HERMANSON, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Automatic Couplers for Railway-Cars, of which the following is a specification.

My invention relates to automatic couplers for railway-cars, and more particularly to the class of car-couplers commonly known as "Master Car-Builders' couplers," and employing a forked draw-head, a pivoted knuckle, and a gravity-lock.

The objects of my invention are to provide a Master Car-Builders' coupler having the customary forked draw-head, pivoted knuckle, and gravity-lock which shall at once be of simple, strong, efficient, and durable construction and in which the gravity-lock shall be incapable of "creeping" or jumping upward while the train is in motion, and thus permitting the accidental uncoupling of the cars of a train and occasioning accidents, and also to provide means for conveniently setting the lock in its position to uncouple or in its elevated position when the knuckle is closed, so that after the lock has once been raised to uncouple the cars the knuckle can subsequently open when the uncoupled cars are separated.

My invention consists in the means I employ to accomplish this object or result—that is to say, it consists in the combination, in a car-coupler, of a pivoted knuckle and a forked draw-head, with a gravity locking pin or block, provided with a shoulder on its front side, adapted to engage a corresponding shoulder on the draw-head through which the locking-pin passes, said locking pin or block having a pivotal lifting-piece hinged to the locking-block in such position that when the lifting-piece is pulled upward to raise the locking-block it will swing or turn on its pivot sufficiently to force the shoulder on the locking-block from under the shoulder on the draw-head, and thus permit the locking-block to be freely moved upward when it is desired to lift it to uncouple the cars, while the engaging shoulders on the locking-block and draw-head effectually prevent the locking pin or block from creeping, jumping, or moving upward accidentally. As an additional security the pivotal lifting-piece is also provided with a shoulder on its rear side, which engages a corresponding shoulder on the draw-head. The tilting movement of the pivoted lifting-piece causes these shoulders to clear each other when upward strain is put upon the lifting-piece to lift the lock. The lifting-piece is pivoted to the locking pin or block near its front edge or side, so that when the lock is suspended from the lifting-piece it tilts or inclines forward by gravity into position to bring the lower end of the lock over the extreme end of the knuckle-tail, and thus automatically support the lock in its elevated position or position to uncouple until the closed knuckle is swung open by the separation of the cars, the lock riding on the knuckle during the opening of the knuckle, and thus remaining in its elevated position or position to couple.

In the accompanying drawings, forming a part of this specification and in which similar letters of reference indicate like parts throughout the drawings, Figure 1 is a horizontal section of a car-coupler embodying my invention. Fig. 2 is a vertical longitudinal section on the line 2 2 of Fig. 1. Fig. 3 is a vertical longitudinal section on the line 3 3 of Fig. 1, and Fig. 4 is a vertical section on the line 4 4 of Fig. 1.

In the drawings, A is the forked draw-head, having the pivot-arm a and guard-arm a'.

B is the knuckle, C the pivot-pin by which the knuckle is pivoted to the draw-head, and D the gravity locking pin or block by which the knuckle is held in its closed or coupled position.

F is the lifting-piece, hinged by the pivot-pin f to the locking pin or block D, near the front edge thereof. The locking pin or block D is provided with a shoulder d on its front side, which fits under and engages a corresponding shoulder a^2 on the draw-head when the locking-pin is in its lowermost or locking position. These shoulders prevent any possibility of the lock creeping or jumping upward or moving upward accidentally. The pivoted lifting-piece F, when upward strain

is put upon it to lift the block, serves to tilt the block backward, so that the shoulder d on the lock clears the shoulder a^2 on the draw-head, thus permitting the lock to be freely moved upward by the lifting-piece. The lifting-piece F is also provided with a shoulder or lip f' on its rear side, which fits under and engages a corresponding shoulder or ledge a^3 on the draw-head when the lock is in its lowermost position, and this also prevents the lock from creeping or jumping upward. The lock is thus provided with a double security against accidental uncoupling. When the lock is moved upward or lifted by the lifting-piece, the pivoted lifting-piece by swinging forward causes the lip or shoulder f' to clear the shoulder a^3 on the draw-head, and thus permits the lifting-piece and lock to move upward.

At the extreme forward end or corner b' of the tail b of the knuckle I provide a projection b^2, having a groove b^3 to receive the toe or projection d at the rear side of the lower end of the locking pin or block when the locking-pin is raised by the lifting-pin into its elevated or uncoupling position. Owing to the fact that the lifting-piece is pivoted to the locking-block near its front side or front of its center of gravity, when the lock is suspended from the lifting-piece its lower end will tilt or swing forward by gravity or automatically, and thus bring the toe d' over the grooved projection b^2 on the tail of the knuckle, thereby causing the lock to be supported in this position for uncoupling, or, as it is commonly called, "set" for uncoupling. The passage-way a^4 in the draw-head, through which the gravity locking-pin D passes, is made somewhat larger than the lock to permit of this tilting movement of the lock to set for uncoupling and also permits the lock to swing sufficiently to cause the shoulders d and a^2 to clear each other when the lock is lifted. The lock is preferably furnished with an inclined face d^2 to bear against the tail of the knuckle, as will be readily understood from the cross-section of the lock in Fig. 1 of the drawings. The lock is also preferably provided with an inclined slot or recess d^3 to receive an inclined block d^4, said block fitting in part in a recess a^5 in the draw-head, and which serves to prevent the lock from being lifted too high or entirely out of the draw-head.

I claim—

1. In an automatic car-coupler, the combination with a pivoted knuckle, of a forked draw-head having a passage-way for a gravity locking pin or block, furnished with a shoulder to engage a corresponding shoulder on the locking pin or block, a gravity locking pin or block having a shoulder adapted to fit under and engage said shoulder on the draw-head to prevent the lock from creeping, jumping or moving upward accidentally, and a pivotal lifting-piece hinged to the locking-block and serving by its pivotal or swinging movement to cause the shoulders on the locking-block and draw-head to clear each other when the locking pin or block is raised by the lifting-piece, substantially as specified.

2. In an automatic car-coupler, the combination with a pivoted knuckle, of a forked draw-head having a passage-way for a gravity locking pin or block, furnished with a shoulder to engage a corresponding shoulder on the locking pin or block, a gravity locking pin or block having a shoulder adapted to fit under and engage said shoulder on the draw-head to prevent the lock from creeping, jumping or moving upward accidentally, and a pivoted lifting-piece hinged to the locking-block and serving by its pivotal or swinging movement to cause the shoulders on the locking-block and draw-head to clear each other when the locking pin or block is raised by the lifting-piece, said lifting-piece being also provided with a shoulder or lip fitting under the shoulder on the draw-head when the lock is in its lowermost position, substantially as specified.

3. The combination with a forked draw-head and pivoted knuckle, of a locking pin or block and a lifting-piece pivoted thereto near its front side and serving, when the lock is suspended from the lifting-piece to cause the lower end of the lock to tilt forward over the corner of the knuckle, and thus support the lock in position for uncoupling, said draw-head having a passage-way for the locking-pin furnished with a shoulder, and said lifting-piece having a shoulder engaging the shoulder on the draw-head to prevent the lock from creeping upward, substantially as specified.

4. The combination in a car-coupler, with a forked draw-head having a vertical passage-way to receive a vertically-sliding locking-pin, of a pivoted knuckle, a vertically-sliding gravity locking-pin, a pivotal lifting-piece hinged at its lower end to said locking-pin near the front edge of said locking-pin, and provided with a lip or shoulder above its hinge-pivot and on the opposite side thereof from the hinge-pivot, the draw-head having a corresponding lip or shoulder engaging said shoulder on the pivotal lifting-piece to prevent the lock from creeping or moving upward accidentally, substantially as specified.

5. The combination with a forked draw-head and pivoted knuckle, of a locking pin or block and a lifting-piece pivoted thereto near its front side and serving, when the lock is suspended from the lifting-piece to cause the lower end of the lock to tilt forward over the corner of the knuckle, and thus support the lock in position for uncoupling, the tail of said knuckle having a grooved projection b^2, and the lower end of the lock having a toe or projection d adapted to fit in said grooved projection on the knuckle-tail, said draw-head having a passage-way for the locking-pin furnished with a shoulder, and said lifting-piece

having a shoulder engaging the shoulder on the draw-head to prevent the lock from creeping upward, substantially as specified.

6. The combination with a forked draw-head, pivoted knuckle and gravity-lock furnished with a shoulder adapted to fit under and engage a corresponding shoulder on the draw-head, and a lifting-piece pivoted to said lock and adapted by its swinging movement to cause the shoulders on the lock and draw-head to clear each other, substantially as specified.

GUSTAF A. HERMANSON.

Witnesses:
H. M. MUNDAY,
EDMUND ADCOCK.