

No. 647,537.

Patented Apr. 17, 1900.

J. D. STORIE.
CAR COUPLING.

(Application filed June 22, 1899.)

(No Model.)

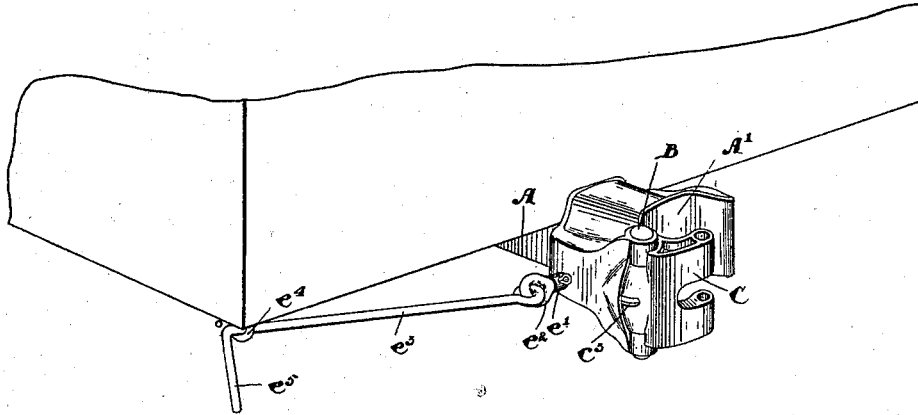


Fig.1

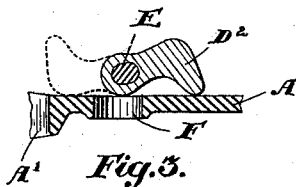
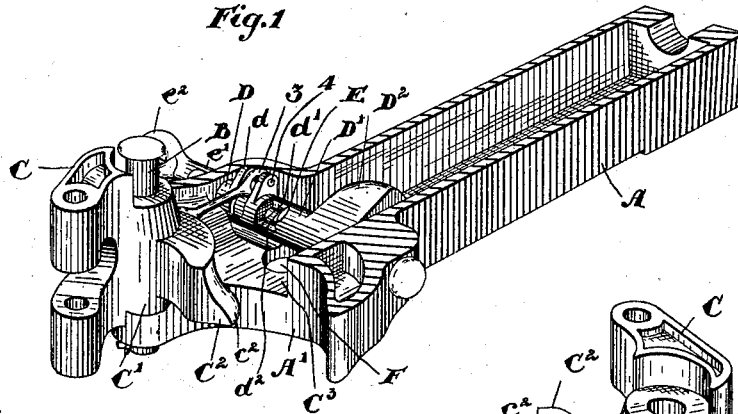


Fig. 3.

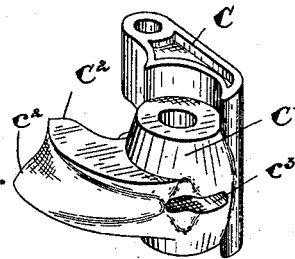


Fig. 5.

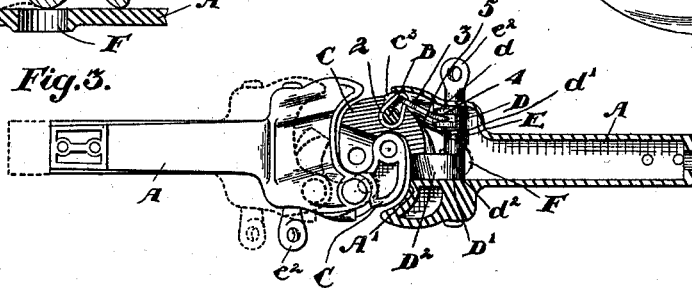


Fig. 4.

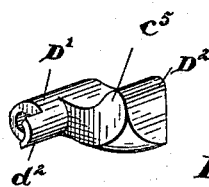


Fig 6.

Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES DOUGLAS STORIE, OF OSHAWA, CANADA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 647,537, dated April 17, 1900.

Application filed June 22, 1899. Serial No. 721,465. (No model.)

To all whom it may concern:

Be it known that I, JAMES DOUGLAS STORIE, manufacturer, of the town of Oshawa, in the county of Ontario, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

My invention relates to improvements in car-couplers; and the object of the invention is to so improve the form of coupler now used as a standard and now commonly in use and approved of as that it will always be in position ready to couple after being uncoupled and which may be set in an unlocked position and left so by the brakeman, so that the coupler may be uncoupled without his personal attention and which when drawn open after being uncoupled will not require any attention or setting in order to permit of the coupling therewith of the opposing locked coupler.

A subsidiary object is to prevent the accumulation of dirt in the couplers, which would have a tendency to prevent it operating properly.

My invention consists, essentially, of a car-coupler having a substantially U-shaped end, at one side of which is pivotally connected, by a suitable bolt or pin, a knuckle provided with a laterally-extending offset, such knuckle being connected by a link to lugs on a sleeve provided with an arm designed to coact with the offset of the knuckle, such sleeve being supported on a pin provided at the outer end with a suitable eye, to which is connected the manipulating-rod, the parts being constructed and arranged in detail, as hereinafter more particularly explained.

Figure 1 is a perspective view of the end of a car, showing the preferred manner of operating my improved coupling. Fig. 2 is a perspective view, partially in horizontal section, showing the construction of the coupler. Fig. 3 is a longitudinal part section. Fig. 4 is a plan view showing two couplers engaged, one of the couplers being shown in dotted lines disengaged. Fig. 5 is a detail of the knuckle. Fig. 6 is a detail of the locking-arm.

In the drawings like letters and numerals of reference indicate corresponding parts in each figure.

A is the main portion or shank of the coupler, which is provided with a substantially

U-shaped end A', at the apex of one of the sides of which is journaled upon the pin B the knuckle C. It will be noticed that the knuckle C has a lateral offset C² extending from the hub C' thereof. The front side of the offset C² when the knuckle is in the closed position is substantially flush with the front side of the coupler. The end of the offset in this position is parallel with the axial line of the coupler. The back of the offset is formed with an acute-angularly-extending flange c². In the hub of the offset, at the inside thereof, on a line with the offset, I provide a slot c³. The pin B extends through the hub and apex of the U-shaped outer end of the coupler, and also extends through a link 2, which projects through the slot c³ in the knuckle and is connected by the eye-rod 3 to the pin 4 in the lugs d of the sleeve D. The sleeve D is journaled on the pin E, which extends through the coupler in proximity to the mouth C³ thereof. The sleeve D has a longitudinal projection d', which is designed to engage the longitudinal projection d² on the sleeve D', located directly opposite the mouth and having a heavy arm D² attached to or forming part of same, the front end being arranged when the arm is thrown forward, as indicated in Fig. 4, to be substantially flush with the inclined face of the end of the draw-head. The sleeve D' is secured on the pin E. The upper portion of the end of the arm is rounded off, as indicated, and the lower portion has a rounded beveled corner on the inside adjacent to the position of the offset of the knuckle when closed. The outer end of the pin is provided with a head e', having an eye e², which has connected to it the eye-rod e³, supported at the outer end at the bottom of the bar by the eyebolt e⁴ and provided with a handle e⁵. The projections are provided on the sleeves D and D' with sufficient space between them, so as to allow of the freedom of movement of the link and of sufficient lost motion to permit of this. At the bottom of the draw-head, directly underneath the pin, I provide an opening F, by which any dirt is prevented from accumulating in the draw-head and through which also the arm may be worked should the connection to the pin become broken.

The operation of my invention is as follows:

The knuckle C of one of the couplers is thrown into the position shown in the drawings, and when the opposite draw-head is pushed toward the open one the outer end of the knuckle strikes the offset C², thereby pushing such offset back, turning the knuckle on its pivot-pin B, and drawing upon the rod 3, so as to cause the sleeve D to rotate on the pin E and bring the projection *d'* against the projection *d*² on the sleeve D', and consequently the arm D² on the sleeve D', down into position against the end of the offset, thereby securely locking the knuckle in position. In order to unlock the knuckle to couple the cars, it is simply necessary to grasp the handle *e*⁵ and turn the rod *e*³ so as to turn the sleeve D', and consequently the arm D², back and up and at the same time cause the projection *d*² on the sleeve D' to contact with the projection *d'* on the sleeve D, thereby rotating it in the opposite direction to that hereinbefore described, thus throwing the knuckle outwardly into the position shown in full lines in Fig. 2 and dotted lines in Fig. 4, with the offset C² in the direct path of the closed end of the knuckle of the opposing draw-bar. It will thus be seen that when the cars are uncoupled one of the draw-bars is set in such a position that it will be always ready to be coupled with the opposing draw-bar.

If the cars are coupled together, of course to unlock the knuckle it is necessary to turn the arm D² vertically up, at the same time causing the projection *d*² on the sleeve D' to contact with the projection *d'* on the sleeve D, thereby permitting the knuckle when the cars are being drawn apart to pass outwardly into the uncoupled position.

In my form of internal construction of the coupler I provide a boss 5, which follows the sweep of the knuckle, abutting the same closely, thereby relieving the pin on which the knuckle is journaled of any strain consequent upon the concussion of the couplers when coming together.

In order to prevent the climbing or unlocking of the arm D² when it is flush with the front of the draw-head—that is to say, when the couplers are locked and the strain upon them—I make the side *c*⁵ of the front opening at a slightly-acute angle to the bottom, so that when the arm is down the overhanging side serves to prevent it rising and further becoming unlocked.

What I claim as my invention is—

1. In a car-coupler, the combination with the draw-head provided with a substantially U-shaped end and the knuckle journaled on a pin extending through the apexes of one of the sides, of an offset extending laterally from the knuckle and designed when the knuckle is open to lie in the path of the outer end of the opposing knuckle, a device for locking the offset in position immediately upon it being thrown back flush with the front of the draw-head and means interposed between said knuckle and device and operating independ-

ently of the offset for positively throwing the latter into locking position as the knuckle turns as and for the purpose specified.

2. In a car-coupler, the combination with the draw-head provided with a substantially U-shaped end and the knuckle journaled on a pin extending through the apexes of one of the sides, of an offset extending laterally from the knuckle and designed when the knuckle is open to lie in the path of the outer end of the opposing knuckle, a device for locking the offset in position immediately upon it being thrown back flush with the front of the draw-head, a connection between said device and the knuckle for positively moving the same in unison and means for releasing the offset and throwing the knuckle open through said connection immediately thereafter as and for the purpose specified.

3. In a car-coupler, the combination with the draw-head provided with a substantially U-shaped end and the knuckle journaled on a pin extending through the apexes of one of the sides, of an offset extending laterally from the knuckle and designed when the knuckle is open to lie in the path of the outer end of the opposing knuckle, an arm suitably pivoted in the draw-head and means interposed between the same and the knuckle to swing the same longitudinally of the draw-head to abut the face or end of the offset when the knuckle is in the closed position said means working independent of the offset as and for the purpose specified.

4. In a car-coupler, the combination with the draw-head provided with a substantially U-shaped end and the knuckle journaled on a pin extending through the apexes of one of the sides, of an offset extending laterally from the knuckle and designed when the knuckle is open to lie in the path of the outer end of the opposing knuckle, an arm suitably pivoted in the draw-head and designed to be swung longitudinally to abut the face or end of the offset when the knuckle is in the closed position and a connection between the hub of the knuckle and the arm whereby the knuckle and arm are simultaneously operated to lock the knuckle or release it as and for the purpose specified.

5. In a car-coupler, the combination with the draw-head provided with a substantially U-shaped end and the knuckle journaled on a pin extending through the apexes of one of the sides, of an offset extending laterally from the knuckle and designed when the knuckle is open to lie in the path of the outer end of the opposing knuckle, an arm located in the mouth of the draw-head, a pin extending through the sleeve of the arm, which is provided with a longitudinal projection, a sleeve loosely journaled on the pin provided with a longitudinal projection designed to engage with the projection on the sleeve of the arm, a connection between the loose sleeve and the knuckle and means for turning the pin as and for the purpose specified.

6. In a car-coupler, the combination with the draw-head provided with a substantially U-shaped end and the knuckle journaled on a pin extending through the apexes of one of the sides, of an offset extending laterally from the knuckle and designed when the knuckle is open to lie in the path of the outer end of the opposing knuckle, an arm located in the mouth of the draw-head, a pin extending through the sleeve of the arm, and to which it is secured having a longitudinal projection, a sleeve loosely journaled on the arm provided with a longitudinal projection designed to engage with the projection on the sleeve of the arm and the lugs, a link extending through a slot in the knuckle and held in position by the pivot-pin thereof and the rod connecting the link to the lugs and means for turning the pin as and for the purpose specified.

7. In a car-coupler, in combination the knuckle and pin connecting it to the draw-head, a slot in the hub of the knuckle, a link extending through the slot and through which the pin of the knuckle extends and a rigid

connection to the link whereby the knuckle may be operated as and for the purpose specified.

8. In a car-coupler, the combination with the knuckle and pin connecting it to the draw-head, a slot in the hub of the knuckle, a link extending through the slot and through which the pin of the knuckle extends, a pin extending through the draw-head, an arm secured in the end of the pin and abutting the offset in the knuckle and having a longitudinal projection, a sleeve loosely journaled on the pin extending through the draw-head, a connection between such sleeve and the link held in the knuckle and a longitudinal projection from the sleeve extending in the path of the longitudinal projection of the sleeve of the arm, such projections being separated by sufficient space to permit of a lost motion as and for the purpose specified.

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Witnesses:

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C. V. ARMS.