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H. DONNELLY.
CAR COUPLING.
APPLICATION FILED JUNE 19, 1908.

Patented Apr. 11, 1911.

2 SHEETS-SHEET 1.

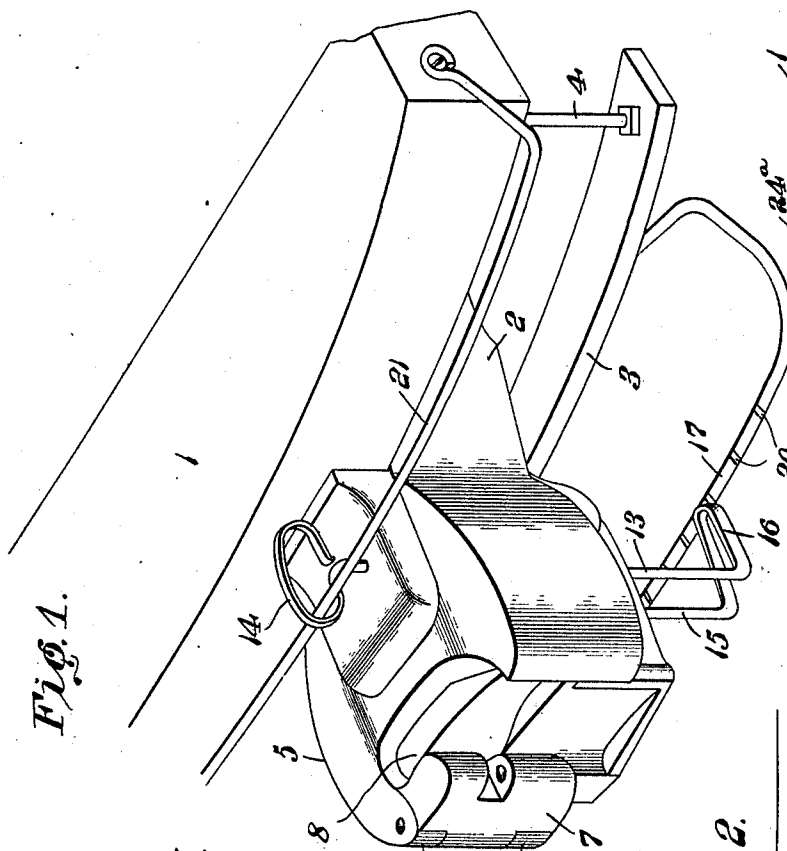


Fig. 1.

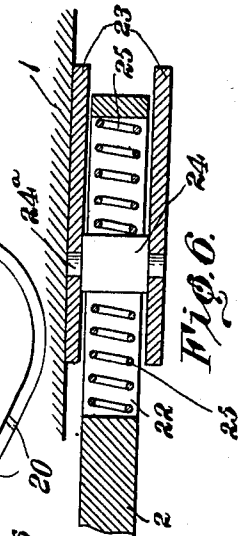


Fig. 2.

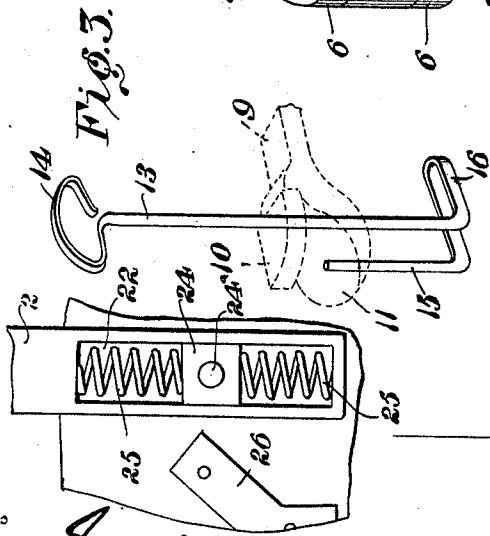


Fig. 3.

Fig. 7.

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Witnesses

[Signature]
W. J. Woodson

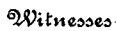
By

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2 SHEETS—SHEET 2.

Fig. 4.



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UNITED STATES PATENT OFFICE.

HUGH DONNELLY, OF LISBON, OHIO.

CAR-COUPLING.

989,236.

Specification of Letters Patent.

Patented Apr. 11, 1911.

Application filed June 19, 1908. Serial No. 439,375.

To all whom it may concern:

Be it known that I, HUGH DONNELLY, citizen of the United States, residing at Lisbon, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

The present invention relates to a novel car coupler and draft rigging, the coupler being of the Janney type, and means being provided for actuating the knuckle when coupling and uncoupling.

The object of the invention is the provision of a draft rigging and coupler which is simple and durable in its construction and which will operate in an effective manner to connect the cars and absorb all shocks and jars.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of a car coupler embodying the invention. Fig. 2 is a bottom plan view, portions being broken away. Fig. 3 is a detail view of the vertical stem which is utilized for moving the knuckle actuating member. Fig. 4 is a longitudinal sectional view through the coupling. Fig. 5 is a transverse sectional view through the coupling. Fig. 6 is a longitudinal sectional view through the draft rigging. Fig. 7 is a bottom plan view of the draft rigging with the lower plate removed.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawing, the numeral 1 designates a car which may be of any approved construction and mounted upon this car is a draw bar 2, the said draw bar being adapted to swing laterally from side to side and the swinging end thereof being confined between the bottom of the car and a guide bar 3 which is spaced from the car bottom and is held rigidly in position by means of bolts 4.

The rear end of the draw bar 2 is provided with the longitudinal slot 22 and is loosely received between the spaced horizontal plates 23 applied to the bottom of the car. Fitted loosely within the slot 22 is a

block 24 which is shown as having a rectangular cross section, the upper and lower ends of the block being formed with pivot studs 24^a which are received within corresponding openings in the upper and lower horizontal plates 23. Arranged within the slot 22 and interposed between the block 24 and opposite ends of the slot are the buffer springs 25 which enable the draw bar to have a limited amount of longitudinal movement with respect to the car and tend to absorb all sudden shocks and jars. Arranged upon opposite sides of the draw bar and between the spaced horizontal plates 23 are the angular members 26 which constitute stops to limit the lateral swinging movement of the draw bar. It will thus be obvious that the draw bar is so connected to the car as to have both a laterally swinging movement and a limited amount of longitudinal movement. The outer extremity of the draw bar is provided with a draw head 5 and both the draw bar and draw head have a hollow formation. Projecting outwardly from one side of the draw head at the top and bottom thereof are the ears 6 which have the knuckle 7 pivotally mounted therebetween. This knuckle which is designed to cooperate in the usual manner with a corresponding knuckle upon the draw head of another car to be coupled with the first mentioned car, is formed with a tail 8 which projects into the hollow portion of the draw head and has an approximately spiral formation, the upper and lower faces of the tail being inclined. The actuating member for controlling the knuckle comprises a bar 9 which fits loosely within the hollow portion of the draw bar, the outer end of the bar terminating in the vertically spaced extensions 10 and 11 which are designed to receive the tail. The upper extension 10 has an angular formation and when the actuating member has been moved to its lowermost position is designed to engage a shoulder 12 at one end of the tail 8 to lock the knuckle in a closed position. The lower extension 11 has the upper face thereof inclined in a manner corresponding to the lower face of the tail and the said lower extension projects laterally slightly beyond the upper extension. When the actuating member is raised from its lowermost position the upper extension 10 is first disengaged from the shoulder 12 of the tail and the laterally projecting portion of the lower extension 11 brought into engagement with the lower inclined surface of the tail. Upon

a continued upward movement of the actuating member the inclined upper face of the lower extension 11 has a cam action upon the lower face of the tail and swings the same to one side so as to rotate the knuckle and move it into an open position. It will be observed however that the draw head engages the tail to limit the swinging movement thereof so that the same is prevented from being moved away from the upper extension 10 and permitting the actuating member to drop downwardly in rear of the tail. When the knuckle is again moved into a closed position as when the cars are coupled the actuating member drops into its original position, the upper extension 10 again engaging the shoulder 12 of the tail to prevent movement thereof.

A vertical stem 13 is slidably mounted within the draw head 5 upon one side of the actuating member, the upper end of the stem projecting beyond the draw head and terminating in an eye 14 while the lower end of the stem extends downwardly below the draw head and is returned at 15, the returned portion being spaced from the main portion of the stem and entering the bottom of the draw head so as to engage the actuating member. Attention is also directed to the fact that the lower returned portion of the stem is deflected rearwardly at 16 into the path of a swinging bail 17, the ends of the bail being provided with eyes 18 which loosely engage guide rods 19 upon the lower face of the guide bar 3. Such a construction admits of the bail having a limited longitudinal movement from side to side and the said bail is formed with notches 20 which engage the rearwardly deflected portion 16 of the stem to produce an interlocking connection therewith so that when the bail has been swung upwardly the draw head can be moved laterally through the medium of the bail. The eye or loop 14 at the upper end of the vertical stem receives an upper bail 21 which is pivotally mounted upon the end of the car. It will thus be obvious that by manipulating either the upper bail 21 or the lower bail 17 a vertical movement can be imparted to the stem 13. As this stem is moved upwardly the extremity of the returned portion 15 thereof engages the knuckle actuating member so that the same is also moved upwardly. As has been previously described this upward movement of the actuating member both releases the knuckle and turns the same into an open position. As soon as the bails are released they drop back into normal position and the stem 13 also moves downwardly into its normal position. The actuating member however moves independently of the stem and is held in an elevated position until an initial closing movement is imparted to the knuckle. It will thus be obvious that the

knuckle can be readily opened from either side of the car and that at the same time the draw head can be adjusted laterally to a limited extent as may be required to cause a proper coupling of the cars as they are brought together.

Having thus described the invention, what is claimed as new is:

1. In a car coupling, the combination with a laterally shiftable draw head, a knuckle, and locking means therefor, of means mounted independently of the draw head and the locking means and movable in one direction into engagement with the locking means to unlock the knuckle, said last-named means being movable in another direction while in engagement with the draw head to shift the same laterally.

2. In a car coupling, the combination with a laterally shiftable draw head, a knuckle pivoted upon the draw head, a member mounted upon the draw head for actuating the knuckle, and a stem slidably mounted upon the draw head for moving the actuating member, of a bail mounted upon the car and having a swinging movement to operate the stem, the bail being also movable transversely with respect to the car and having engagement with the stem to shift the draw head laterally.

3. In a car coupling, the combination with a laterally shiftable draw head, a knuckle pivoted upon the draw head, a member mounted upon the draw head for actuating the knuckle, and a stem slidably mounted upon the draw head for moving the actuating member, of a bail mounted upon the car and having a swinging movement to operate the stem, the bail being also movable transversely with respect to the car and being notched to engage with the stem to shift the draw head laterally.

4. In a car coupling, the combination with a draw head, of a knuckle pivoted upon the draw head, a member mounted upon the draw head for actuating the knuckle, a vertical stem slidably mounted in the draw head on one side of the actuating member, the stem projecting downwardly beyond the draw head and having its lower end returned upwardly and terminating below the actuating member and arranged to bear against the same upon the upward sliding movement of the stem, and a swinging bail adapted to be moved into engagement with the returned lower end of the stem to slide the same upwardly.

5. In a car coupling, the combination with a laterally shiftable draw head, a knuckle, and a locking device for the knuckle, of a bail movable in one direction relative to the draw head to actuate the locking device, the bail being movable in another direction with the draw head to shift the same laterally.

6. In a car coupling, the combination with

a laterally shiftable draw head, a knuckle, and a locking device for the knuckle, of a bail pivotally and slidably mounted independently of the draw head and movable about its axis to actuate the locking device, the bail being slidable while in engagement with the draw head to shift the same laterally.

7. In a car coupling, the combination with a laterally shiftable draw head, a knuckle, and a locking device for the knuckle, embodying a member slidable vertically in the draw head, of a bail having a swinging movement to operate the said member, the bail being also movable transversely with respect to the car and having a positive engagement with the member to shift the draw head laterally.

8. In a car coupling, the combination with a draw head, a knuckle pivoted to the draw head, and a member mounted in the draw head for actuating the knuckle, of a stem

slidable vertically in the draw head on one side of the actuating member, the stem projecting downwardly beyond the draw head and having its lower end returned upwardly below the actuating member and arranged to lift the same upon the upward sliding movement of the stem, and means for moving the stem upwardly in the draw head.

9. The combination with a laterally shiftable draw head, of a member mounted independently of the draw head and movable in one direction into positive engagement therewith, the member being movable in another direction while in engagement with the draw head to shift the same laterally.

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

HUGH DONNELLY. [L. S.]

Witnesses:

GEO. T. FARRELL,

G. W. ZELL.