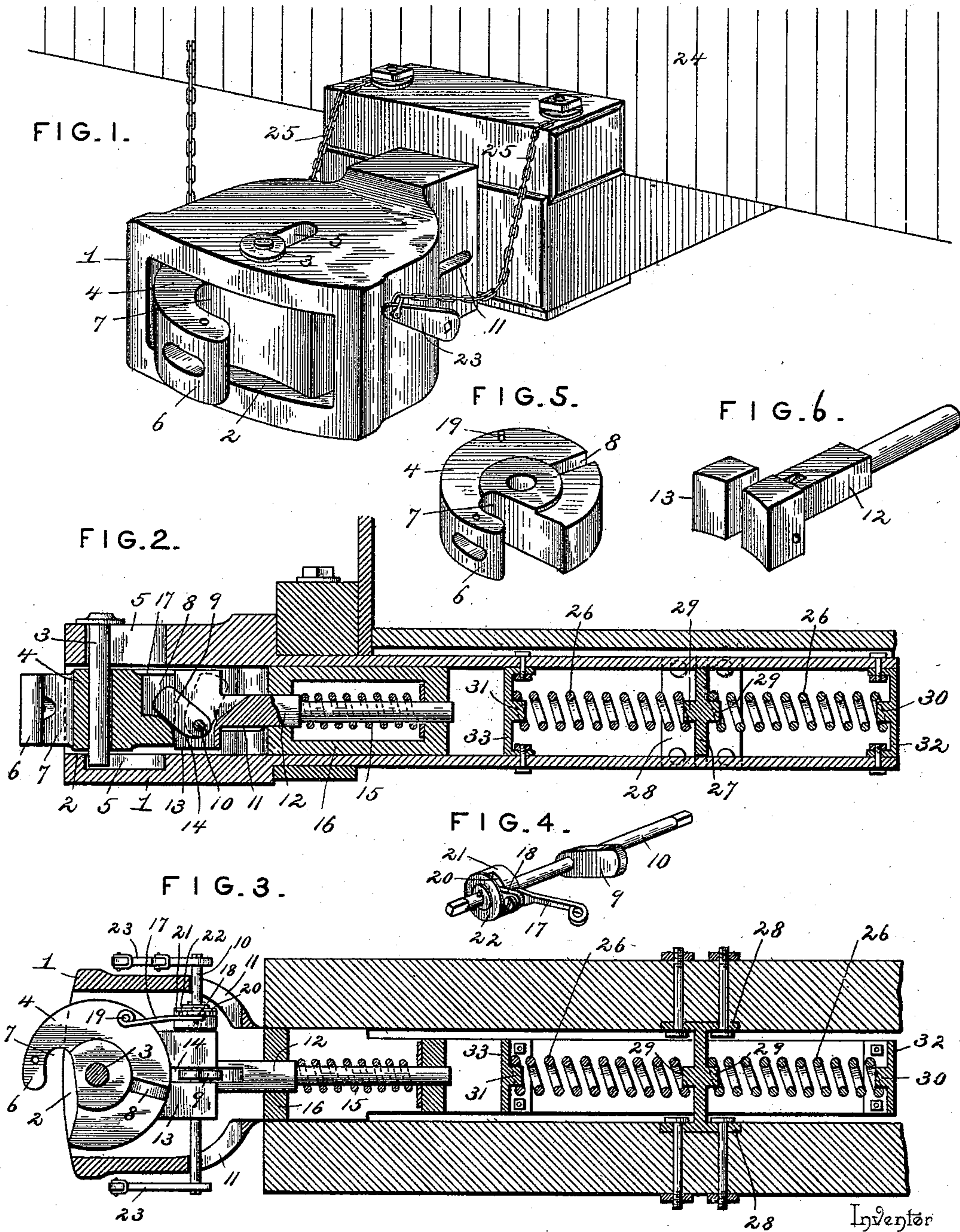


(No Model.)

G. J. FORREY.
CAR COUPLING.

No. 538,445.

Patented Apr. 30, 1895.



Witnesses

Harry L. Amer.
J. H. Riley

By his Attorneys,

George J. Forrey.
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UNITED STATES PATENT OFFICE.

GEORGE JONNATHAN FORREY, OF CARLISLE, PENNSYLVANIA, ASSIGNOR
OF ONE-HALF TO JACOB A. KARPER, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 538,445, dated April 30, 1895.

Application filed August 31, 1894. Serial No. 521,843. (No model.)

To all whom it may concern:

Be it known that I, GEORGE JONNATHAN FORREY, a citizen of the United States, residing at Carlisle, in the county of Cumberland and State of Pennsylvania, have invented a new and useful Car-Coupling, of which the following is a specification.

The invention relates to improvements in car couplings.

The object of the present invention is to improve the construction of car couplings, and to provide one which will be simple and comparatively inexpensive in construction, capable of coupling automatically, and adapted to be readily uncoupled without going between the cars.

A further object of the invention is to provide a car coupling in which, should the draw-gear become broken, the parts will automatically uncouple to prevent the draw-head from falling upon the track and injuring cars.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a car-coupling constructed in accordance with this invention and shown applied to a car. Fig. 2 is a central vertical longitudinal sectional view. Fig. 3 is a horizontal sectional view. Fig. 4 is a detail perspective view of the transverse rock-shaft, illustrating the construction of the catch and the arm. Fig. 5 is a detail perspective view of the knuckle. Fig. 6 is a detail view of the spring-actuated bar.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates a draw-head, having a horizontal opening 2, and mounted therein, on a vertical pivot 3, is a circular knuckle 4, which is capable of a rotary movement on the pivot 3, and which is also adapted to move inward and outward in the draw-head a limited distance. The vertical pivot-pin has its ends arranged in suitable ways 5, to permit the inward and outward movement of the knuckle, and the latter is provided at its front with an arm 6, to engage the corresponding arm of a similar knuckle; and it has a transversely-disposed, or substantially radial, opening 7,

in rear of the arm to receive the arm of another knuckle. The arm 6 is provided with a link-opening and a coupling-pin perforation to permit an ordinary link to be employed when necessary; and the knuckle is provided at its back with a notch 8, adapted, when the knuckle is coupled, to be engaged by a catch 9, of a rock-shaft 10. When the knuckle is uncoupled the notch 8 is located to one side of the center of the back of it; and in coupling, the knuckle is partially rotated to carry the said notch 8 to a central position to be engaged by the catch.

The catch is rigidly mounted on the rock-shaft 10, which is disposed horizontally and extends transversely of the draw-head and is located in opposite longitudinal slots or openings 11, of the draw-head, whereby the shaft is capable of a limited inward and outward movement longitudinally of the draw-head. The transverse rock-shaft is journaled in suitable bearings of a spring-actuated bar 12, and which is adapted to hold the catch firmly in engagement with the notch of the knuckle when the parts are coupled, and which is provided with a head 13, having a central slot or recess 14, in which the catch works. The bar 12 has disposed on it a spiral spring 15, which cushions the knuckle when the draw-heads of cars contact in coupling; and the front end of the spring engages a shoulder of the bar and its rear end bears against a suitable stop of the draw-bar, a rectangular frame 16 being preferably provided for mounting the spring-actuated bar.

The operation of coupling is automatic, and the catch of the transverse shaft is automatically carried in engagement with the notch 8, through the partial rotation of the knuckle, the latter being connected by a short bar or link 17, with an upward-extending arm 18, of the rock-shaft. The front end of the link or bar 17 is connected by a pin, or similar fastening device 19 with the upper face of the knuckle, and its rear end is pivotally connected to the upper end of the arm 18, which is loosely mounted on the rock-shaft and has a limited movement independent thereof. The lower end of the arm 18 is perforated for the reception of the shaft 10, and it is located in a recess 20, of a disk 21, fixed to the shaft. The disk 21 has opposite shoulders formed by

the recess to limit the independent movements of the shaft and the arm; and as soon as the knuckle, in coupling, rotates sufficiently to carry its notch opposite the recess
 5 or slot of the spring-actuated bar, the upward-extending arm of the rock-shaft engages the forward shoulder of the disk 21 and carries the catch into engagement with the notch or
 10 recess 8 of the knuckle, thereby locking the latter coupled. The arm 18 is retained in the recess of the disk 21 by a washer 22, secured against the face of the disk.

The knuckle, as before stated, is capable of a limited longitudinal movement, whereby
 15 it is cushioned by the spring 15, and is adapted to yield to the jolting incident to the passage of a train without liability of the catch being accidentally thrown out of engagement with the notch or recess 8.

20 At the outer ends of the transverse shaft are arranged rigid arms 23, located on the exterior of the draw-head, and connected with a car 24, by short chains 25, loosely arranged at opposite sides of the draw-head. When
 25 the draw-head is coupled, the exterior arms 23 extend forward and have sufficient weight to prevent the rock-shaft from turning accidentally; but, in event of the draw-gear becoming broken, the draw-head in moving
 30 outward will tighten the chains and cause the arms 23 to swing upward and unlock the knuckle, to effect the operation of uncoupling, thereby preventing further outward movement of the draw-head.

35 One of the exterior arms is designed to be connected with the top of the car by means of a chain to enable the operation of uncoupling to be performed at that point; and any
 40 suitable means may be provided to enable the operation of coupling to be performed from the platform of a car, or the sides thereof; but the chains will be found sufficiently handy for this purpose.

The draw-bar is designed to be cushioned
 45 by means of a pair of springs 26, located in advance and in rear of a transverse brace 27, which is provided at its ends with flanges 28, designed to be bolted to the draw-timbers of a car, and to be let into the recesses thereof.
 50 The transverse brace is recessed at its upper and lower edges to receive the top and bottom of the draw-bar, and it is provided with opposite bosses 29, to receive the adjacent ends of the springs, and the other ends of the
 55 springs are supported by bosses 30 and 31, of straps 32 and 33, secured to the draw-head and to the rear end of the draw-bar.

It will be seen that the car coupling is simple and comparatively inexpensive in construction, that it is positive and reliable in
 60 operation, that it is capable of coupling automatically, and that it is adapted to be readily uncoupled. It will also be apparent that the draw-head will be automatically uncoupled
 65 to prevent it from leaving its car and falling upon the track, in event of any breakage of the draw-gear.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or
 70 sacrificing any of the advantages of this invention.

What I claim is—

1. In a car coupling, the combination of a draw-head, a pivoted knuckle mounted there-
 75 in and capable of a limited movement longitudinally of the draw-head, a spring-actuated bar arranged in rear of the knuckle, and a catch carried by the spring-actuated bar for engaging the knuckle, substantially as and
 80 for the purpose described.

2. In a car coupling, the combination of a draw-head, a pivoted knuckle mounted there-
 85 in and capable of a limited inward and outward movement and provided at its back with a recess, a spring-actuated bar located in rear of the knuckle, a rock-shaft mounted on the spring-actuated bar and carried by the same, and a catch fixed to the rock-shaft and
 90 arranged to engage the recess of the knuckle, substantially as described.

3. In a car coupling, the combination of a draw-head, a pivoted knuckle mounted there-
 95 in and capable of a limited inward and outward movement, a catch mounted in rear of the knuckle for engaging the same and capable of a limited movement longitudinally of the draw-head to conform to the movement of the knuckle, a spring for cushioning the in-
 100 ward movement of the knuckle and the catch, and connections between the knuckle and the catch, whereby the catch is thrown into engagement with the knuckle by the rotation of the latter, substantially as described.

4. In a car coupling, the combination of a
 105 draw-head, a pivoted knuckle mounted therein and capable of a limited movement longitudinally of the draw-head and provided at its back with a recess, a spring-actuated bar
 110 arranged in rear of the knuckle, a rock-shaft journaled on the spring-actuated bar and carried by the same and provided with a catch for engaging the recess of the knuckle, an
 115 upward-extending arm movably connected with the rock-shaft and capable of a limited independent movement, and connections between the upward-extending arm and the knuckle, substantially as described.

5. In a car coupling, the combination of a draw-head, a pivoted knuckle mounted there-
 120 in, a transverse rock-shaft provided with a catch for engaging the knuckle, a disk fixed to the rock-shaft and provided with opposite shoulders, an arm loosely mounted on the shaft and arranged between the shoulders of
 125 the disk, and a bar connecting the arm with the knuckle, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE JONNATHAN FORREY.

Witnesses:

JNO. B. LANDIS,
 NORMAN LANDIS.