

No. 742,380.

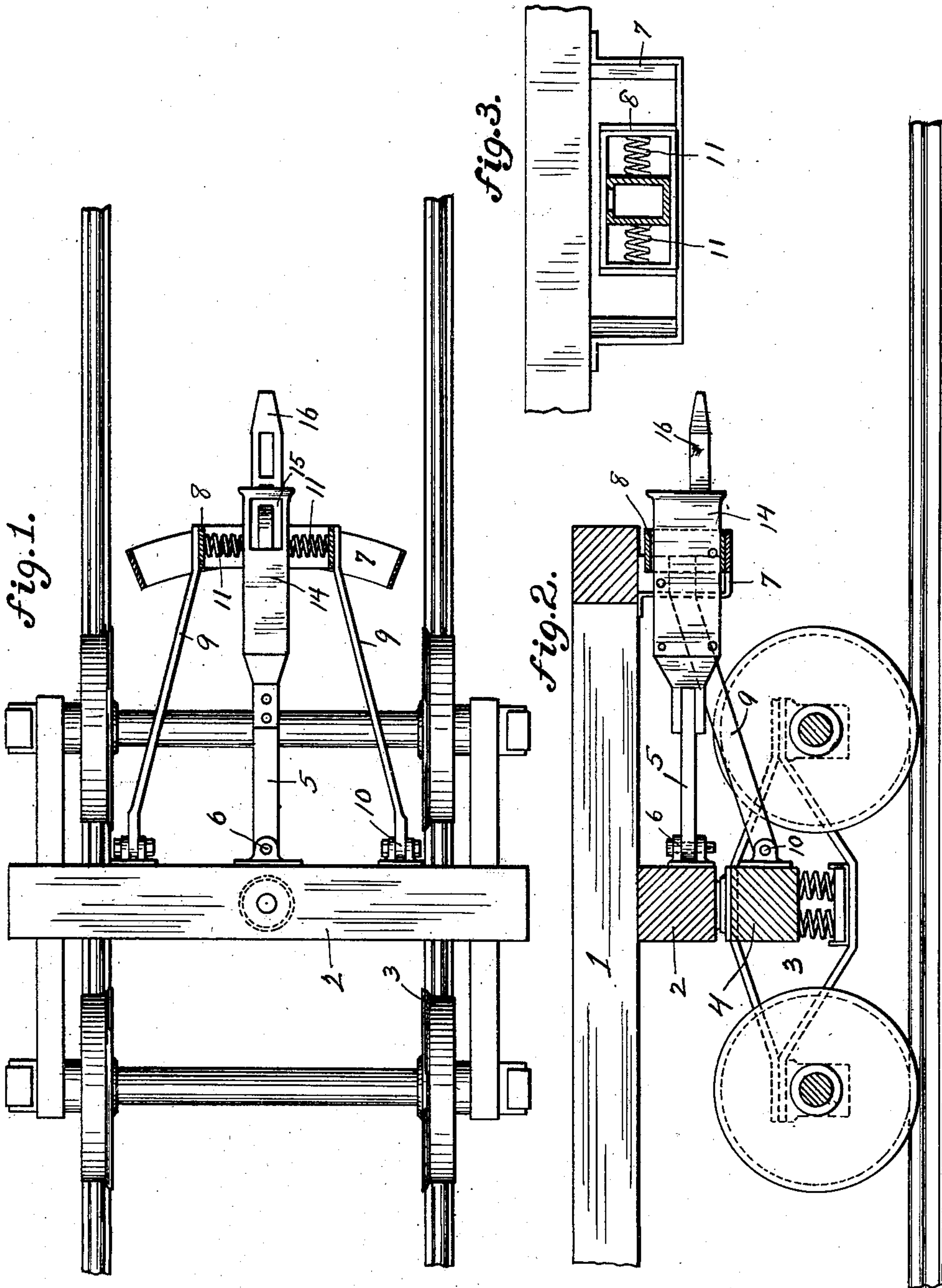
PATENTED OCT. 27, 1903.

J. W. BARTH.  
CAR COUPLING.

APPLICATION FILED FEB. 11, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:  
*Fred D. Sweet*  
*Robert C. Totten*

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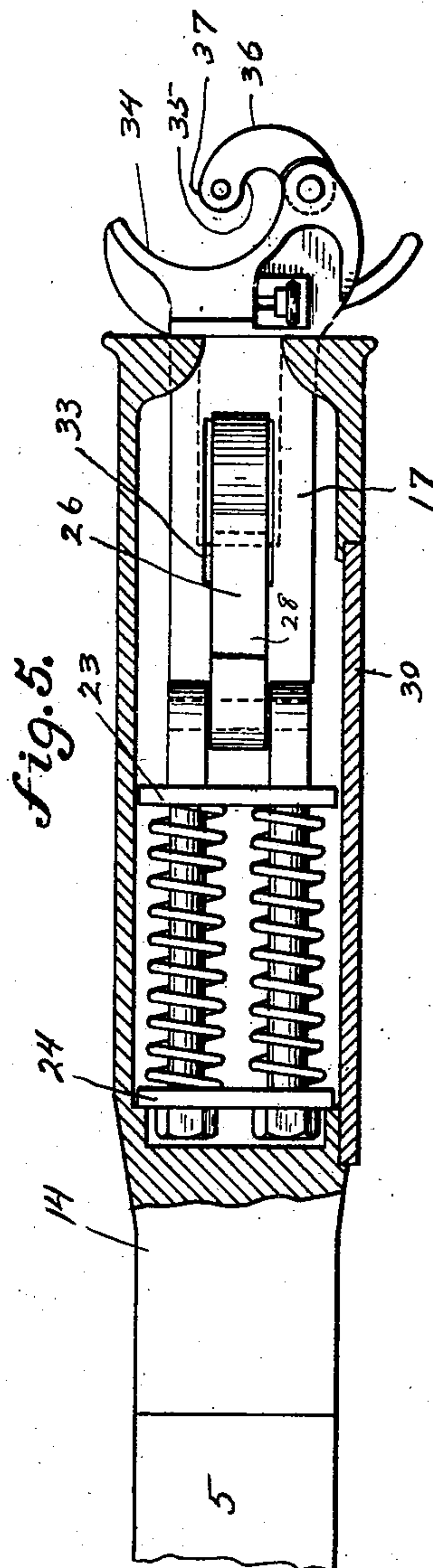
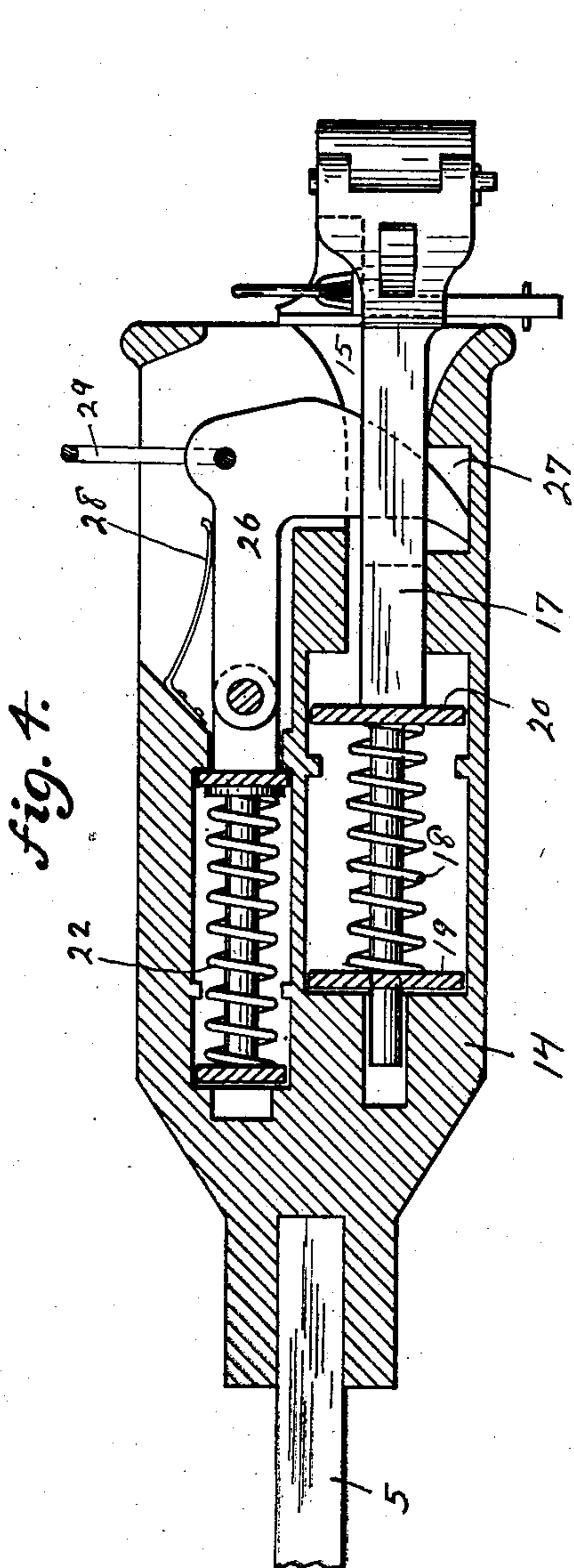
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## UNITED STATES PATENT OFFICE.

JOHN W. BARTH, OF PITTSBURG, PENNSYLVANIA.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 742,380, dated October 27, 1903.

Application filed February 11, 1903. Serial No. 142,834. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN W. BARTH, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Car-Couplings; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to car-coupling devices; and it has for its object to provide coupling devices whereby cars can be coupled on sharp curves more easily than with old appliances and whereby the couplings will pull in a direct line in rounding curves, thus taking the strain off the couplings and also enabling the cars to pass around the curves more easily.

A further object of my invention is to provide a draw-head for car-couplings adapted to receive either an ordinary coupling-link or a coupler of the Janney or other automatic type.

Draft-riggings and coupling devices for railway-cars heretofore commonly used with automatic couplers have the draw-bars mounted practically rigidly on the car-body or at best capable of only slight lateral motion. The consequence is that the couplers project substantially in the middle longitudinal line of the car-body, so that when cars thus equipped pass around a curve the couplers are necessarily at a considerable angle to each other. By reason of this position the couplers are subjected to a great strain, which is transmitted to the trucks and causes the wheels to bind on the track. This strain is very destructive and often results in breaking the coupler or straining some of the other parts of the car, besides causing severe friction between the wheels and the track and requiring more power to pull the cars around curves. Furthermore, with the old coupling devices it is difficult to effect a coupling on a curve, because said couplers are presented to each other at such an angle that with ordinary automatic couplers of the Janney type either the knuckle of one coupler will strike that of the other, thus closing them without locking the knuckles together, or else the knuckles will entirely miss the opposite draw-heads, likewise failing to couple.

One of the objects of my invention is to

provide a coupler and draft-rigging for cars wherein the above objections are overcome. To this end I pivot the draw-bar to the body-bolster and provide a yoke connected to the truck and embracing the coupling, so that the coupler will be moved laterally as the truck swivels on the car-body in passing around curves, in this way moving the coupler out of the longitudinal line of the car-body and presenting it at a lesser angle to the coupler of the next adjacent car. I also provide springs on each side of the draw-bar and between the same and the yoke, connected to the truck, so that in passing around curves the couplers can yield still farther laterally and enable the couplers of adjacent cars to pull practically in a straight line.

A large number of railway-cars are as yet not equipped with automatic couplers, but are provided with draw-heads adapted for use with an ordinary coupling-link. Cars thus equipped are coupled to cars equipped with automatic couplers by providing the knuckle of the latter with a notch in its end and a vertical opening for a coupling-pin, so that the coupling can be effected by links and pins.

A further object of my invention is to provide a draw-head which is adapted to receive either an ordinary coupling-link for coupling with cars unprovided with automatic couplers or to receive an automatic coupler of the Janney or other type, so that cars equipped with my draw-head can have readily applied thereto an automatic coupler for coupling with cars that are equipped with the ordinary automatic couplers.

My invention also comprises certain details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of a car and truck supplied with my improved draft and coupling mechanism. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a front end view thereof, the draw-bar being in section. Fig. 4 is a vertical longitudinal section through the draw-head, and Fig. 5 is a horizontal longitudinal section through the same.

In the drawings the car-body is shown at 1, the body-bolster at 2, the truck at 3, and the truck-bolster at 4. All of these parts may be



of the usual or any preferred construction, and the particular forms shown in the drawings have been selected for purposes of illustration merely.

5 5 is the draw-bar, pivoted to the body-bolster at 6 on a vertically-arranged pivot supported from the car-body by the carrier-iron 7, which is of sufficient width to permit a considerable lateral movement of the draw-bar  
10 in either direction and preferably being segmental in shape, as shown in Fig. 1. Moving on the carrier-iron 7 is a yoke 8, which embraces the draw-bar and has connected thereto rearwardly-extending arms 9, secured  
15 to the truck-bolster, so that when the truck swivels with reference to the car-body in passing around a curve the yoke 8 will be moved laterally, thus also moving the draw-bar laterally and keeping it in the longitudinal center of the truck rather than in that of the car-body. Consequently couplings can be more  
20 easily made on curves, because the couplers are presented to each other at a lesser angle than if the draw-bars were connected to the car-body alone. The arms 9 preferably are pivoted to the truck-bolster on horizontal pivots 10 in order to allow relative vertical movement between the truck and car-body. Preferably the yoke 8 is made of considerably-  
25 greater width than the draw-bar, and interposed between the sides of said draw-bar and the yoke 8 are springs 11, which when the car passes around a curve permit the draw-bar to yield still more laterally, so that it will  
30 be out of the longitudinal center of the truck and substantially in a straight line with the draw-bar of the next adjacent car. This relieves the draw-bars of the strain imposed upon them when pulling at an angle and also  
35 reduces the friction between the wheels and the rails, thus enabling the cars to more easily pass around curves. I provide the draw-bar with an enlarged head 14 at its forward end, which is provided with a longitudinal opening  
40 15 of sufficient size to receive a coupling-link 16, as shown in Figs. 2 and 4, or the shank 17 of an automatic coupler of the Janney or other type, as shown in Figs. 1 and 5. In line with this opening are the buffer-springs  
45 18, which may be of any preferred construction, but preferably having two double springs side by side, as indicated in Fig. 5, these springs being interposed between a backing-plate 19 and the buffer-plate 20, which latter receives  
50 the impact of the coupling member.  
Above the buffer-springs 18 are located the draft-springs 22, and these also preferably will comprise two double springs side by side, as shown in Fig. 1. The front ends of these  
55 60 springs bear against the holding-plate 23, and against their rear ends bears the draft-plate 24, to which are connected the bolts or rods 25, which project forwardly through the holding-plate 23 and have pivoted to their forward ends the coupling-hook 26. This hook projects through the longitudinal opening 15 in the draw-head and has its point curved

somewhat rearwardly and of such length that it will pass below the floor of the opening 15 into an opening or recess 27 in the lower wall of the draw-head. By this construction the hook is not as liable to jump up and release the coupling member as with the old construction of coupling-hooks. 70

To assist in holding the coupling-hook 26 75 down, a suitable spring, such as the flat plate-spring 28, may be employed. This hook will have attached thereto any suitable means, such as the link 29, for raising the same to uncouple the cars. One of the side walls of 80 the coupler is formed as a removable plate 30, so that access can be had to the interior of the draw-head in order to remove or replace the buffer-springs and other parts. This draw-head, as before stated, is designed to 85 receive either an ordinary coupling-link 16, as shown in Figs. 2 and 4, or an automatic coupler, as shown in Figs. 1 and 5. The shank 17 of the automatic coupler is provided with a vertical hole 33, into which the coupling- 90 hook 26 takes in order to hold the coupler in the draw-head. This coupler when placed in the draw-head will bear against the buffer-plate 20 in the usual way, so that the buffer and draft springs of the draw-head are utilized 95 therewith. This automatic coupler may be of any preferred form, but preferably is a modified Janney type, having the concave forward end 34 of the head, the concave inner face 35 of the knuckle, the convex outer 100 face 36 of said knuckle, and the convex end 37 of the knuckle all formed as arcs of circles of different radii, so that in rounding curves two such couplers will roll on each other and allow said couplers to assume a 105 large angle one to the other. This coupler is not claimed specifically in this application, but is claimed in my application filed February 11, 1903, Serial No. 142,833.

By pivoting the draw-bar to the car-body 110 and connecting it to the truck by a yoke the draw-bar is normally held in the longitudinal center of the truck, so that in coupling on curves the couplers of two adjacent cars will be at an angle to the body of the car and 115 more nearly in line with each other than if they were supported from the car-body alone. Furthermore, the side springs between the draw-bar and the yoke permit a still further lateral movement of the coupler when the 120 train is passing around a curve, thereby permitting the couplers to pull practically in a straight line and relieving them of strain and also decreasing the friction between the wheels and the rails and enabling the cars to 125 pass more easily around the curve. The draw-head is so shaped that it will receive either a coupling-link or the shank of an automatic coupler, and the hook in said draw-bar by its downwardly-projecting curved end 130 taking into a recess or opening in the lower wall of the draw-head cannot jump up and release the coupling member.

The coupling device as a whole is a great



improvement over prior coupling devices in that it is relieved of the severe strains usually imposed thereupon and also that trains equipped therewith will pass around curves more easily than heretofore, while the couplings of cars on curves can be more readily effected. The locking parts of the coupling devices are provided with means for preventing them from jumping up under the jolting of the train, thus guarding against the accidental uncoupling of the cars.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a car-coupling, the combination with a car-body and truck, of a draw-bar pivoted to the car-body on a vertical axis, a yoke pivotally secured to the truck on a horizontal axis, said yoke embracing the draw-bar to cause it to swing with the truck, and a carrier-bracket for said yoke and draw-bar secured to the car-body.

2. In a car-coupling, the combination with a car-body and truck, of a draw-bar pivoted to the car-body, a yoke secured to the truck and embracing the draw-bar to cause it to swing with the truck, and springs between said yoke and the draw-bar on both sides of the latter.

3. In a car-coupling, the combination with the car-body and truck, of a draw-bar pivoted to the car-body on a vertical axis, a yoke pivotally secured to the truck on a horizontal axis and embracing the draw-bar, springs interposed between said yoke and the draw-bar on both sides of the latter, and a carrier-bracket for said yoke and draw-bar secured to the car-body.

4. In a car-coupling, the combination with the car-body and truck, of a draw-bar pivoted to the car-body, a yoke secured to the truck and embracing the draw-bar, springs be-

tween said yoke and draw-bar on both sides of the latter, a draw-head on said draw-bar, buffer and draft springs in said draw-head, a coupling member adapted to enter said draw-head and contact with said buffer-springs, and a coupling-hook secured to the draft-springs and arranged to engage said coupling member.

5. A car-coupling device comprising a draw-bar pivotally secured to the car-body, means for holding said draw-bar in line with the longitudinal axis of the truck, a coupling device secured to said draw-bar and comprising a head provided with two horns, a knuckle pivoted to one of said horns, and a locking device for said knuckle, the inner concave face of the knuckle, the outer convex face thereof, and the concave end of the head all being formed as the arcs of circles of different radii.

6. In car-coupling mechanism, the combination with a car-body and truck, of a draw-bar pivotally secured to the car-body, a yoke secured to the truck and embracing said draw-bar and arranged to hold the draw-bar in the longitudinal center of the truck, a coupling device attached to said draw-bar and comprising a head provided with a concave forward end, a knuckle pivoted to one side of said head, and a locking device for said knuckle, the inner concave face of the knuckle, the outer convex face thereof, and the concave end of the draw-bar, all being formed as arcs of circles of different radii.

In testimony whereof I, the said JOHN W. BARTH, have hereunto set my hand.

JOHN W. BARTH.

Witnesses:

ROBERT C. TOTTEN,  
FRED D. SWEET.