April 18, 1950 V. E. SISSON 2,504,889

SWING MOTION EMERGENCY COUPLER SUPPORT

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Fig. 1.

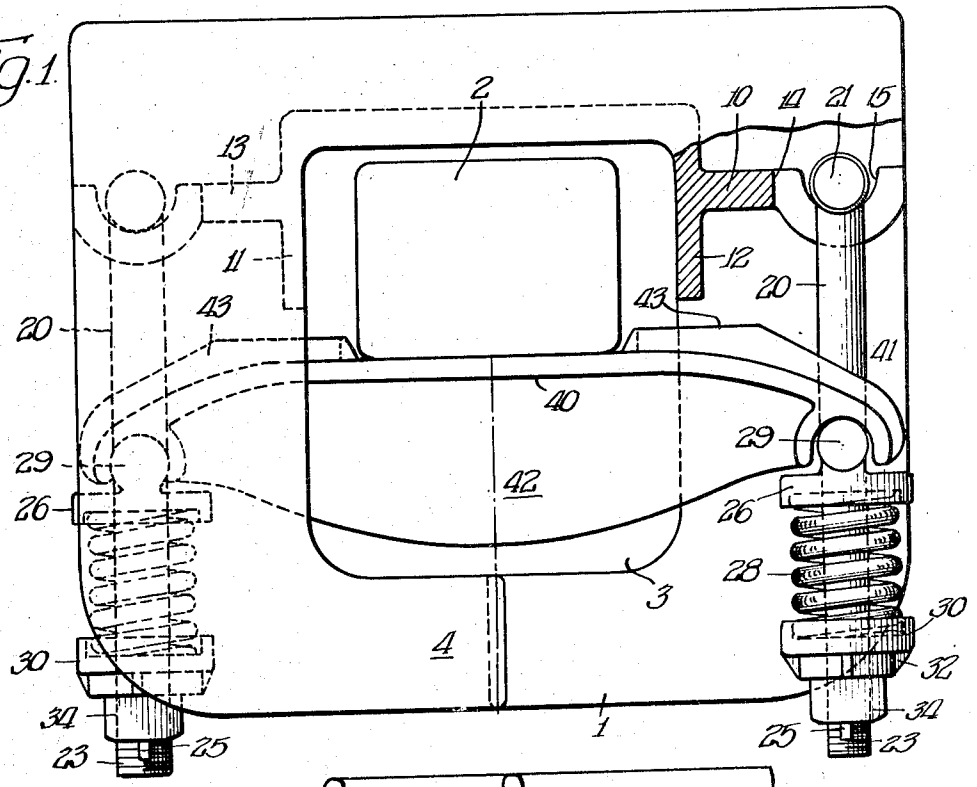
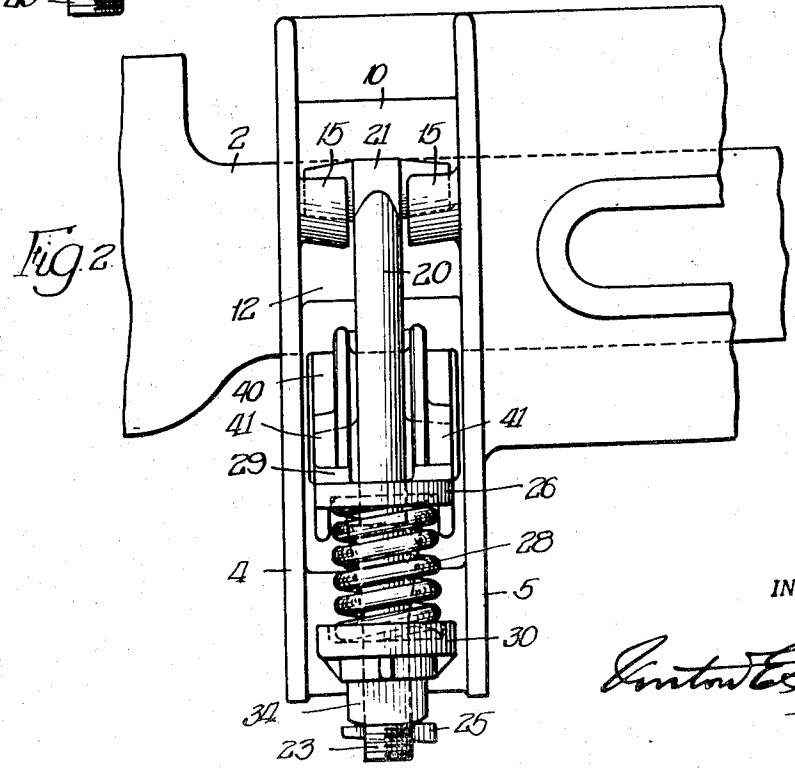


Fig. 2.



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Fig. 3

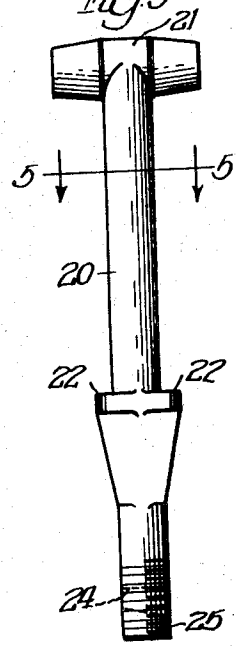


Fig. 4

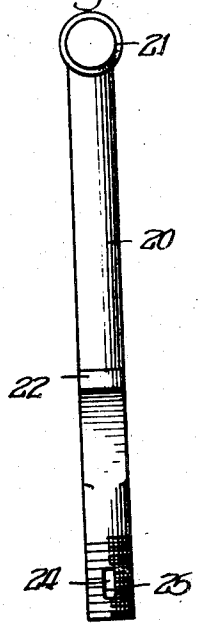


Fig. 6

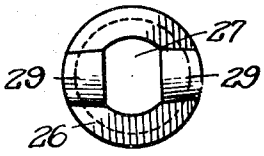


Fig. 7



Fig. 8

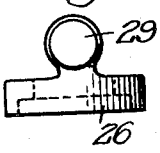


Fig. 9

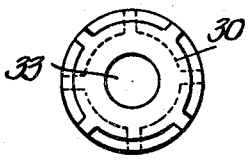


Fig. 5



Fig. 10

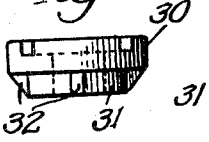


Fig. 11

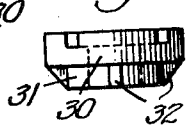


Fig. 12

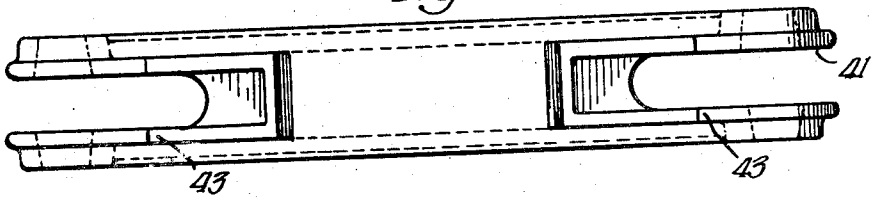
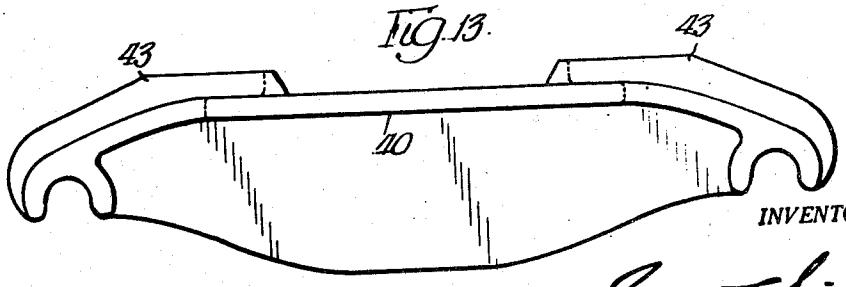


Fig. 13.



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Fig. 17

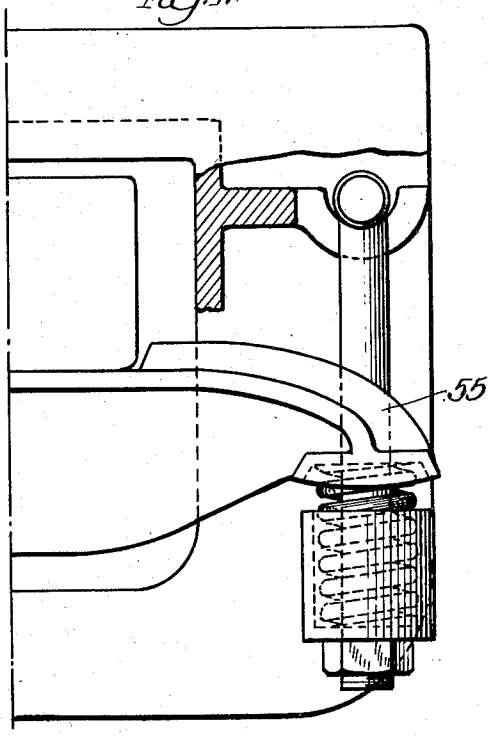


Fig. 18

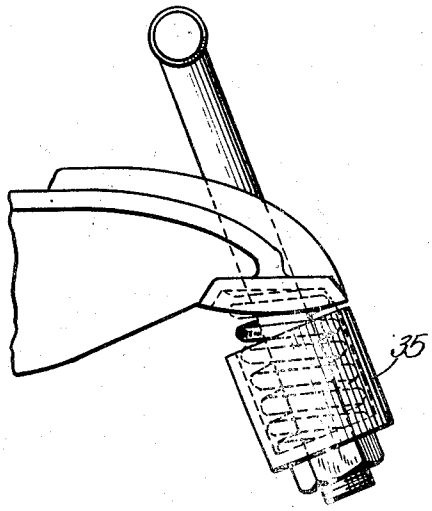


Fig. 14

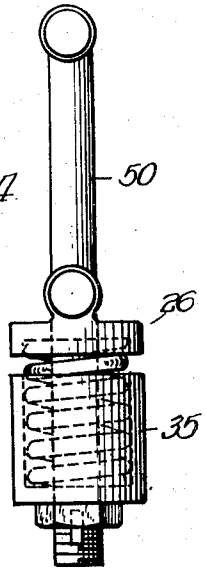


Fig. 16

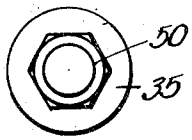
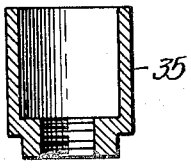


Fig. 15



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Patented Apr. 18, 1950 2,504,889

UNITED STATES PATENT OFFICE

2,504,889

SWING MOTION EMERGENCY COUPLER SUPPORT

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Application October 31, 1946, Serial No. 706,982

3 Claims. (Cl. 213—61)

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This invention relates to coupler carriers for railway freight cars, and more particularly to cushioned coupler carriers and positioning devices, and are associated with the striking castings for resiliently supporting associated couplers or drawbars of said cars.

The principal object of the invention is to provide a cushioned coupler support and positioning device of the swing motion type, such as shown in the Barrows Patent No. 1,993,712 of March 5, 1935, and in addition to provide means to limit the downward movement of the coupler and thereby provide an emergency coupler support which will continue to function as a coupler positioning and supporting device even though the cushioning means ceases temporarily to perform its function.

The primary object of the invention, therefore, is to provide a cushion coupler support and positioning device wherein should the cushioning means be inoperative for any reason the device would still function as a coupler carrier and positioning device, thus saving the car from possibly being declared unfit for further service.

A further object of the invention is to provide means whereby the position of the cushioning means may be manually adjusted, in relation to the coupler so as to maintain said coupler at the proper elevation.

Another object is to provide means to adjust the coupler height even when the device is functioning as an emergency coupler support.

Another object is to provide a novel form of swing link incorporating means cooperative with other elements of the device to provide an emergency coupler support.

In the drawings:

Figure 1 is a half section and half front elevation of a combined cushioned coupler carrier and centering device illustrating the invention.

Figure 2 is a side elevation of Figure 1.

Figures 3 and 4 are elevations at right angles to each other of the swinging links.

Figure 5 is a section on line 5—5 of Figure 3.

Figures 6, 7 and 8 are, respectively, plan, side and end elevations of the upper spring followers of the invention.

Figures 9, 10 and 11 are, respectively, plan, side and end elevations of the lower spring followers of the invention.

Figures 12 and 13 are, respectively, plan and side elevations of the coupler carrier.

Figures 14, 15 and 16 are, respectively, side elevation, bottom plan, and central vertical section of a modified form of lower spring follower for the device.

Figure 17 is an elevation partly in section of a modified form of carrier in normal position.

Figure 18 is a side elevation of the carrier and link when laterally moved.

The striker is shown generally at 1 and comprises either an integral casting or one built up of welded parts so as to surround the coupler shank

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2. Striker 1 is rectangular in form, as shown in Figure 1, and has the rectangularly shaped central opening 3 therein through which the car coupler shank 2 projects, and said striker is securely attached to the end of the center sill of the car. The striker usually comprises two spaced plates 4 and 5 which are securely held in spaced relation by any desired means.

Between said spaced plates 4 and 5 above the coupler shank is the link carrier 10 which spans the space between walls 4 and 5, is welded thereto or formed integral therewith, and is provided with depending walls 11 and 12 spaced apart slightly more than the width of the coupler shank, thereby permitting lateral swinging of the coupler between said walls 11 and 12. Projecting laterally beyond the walls 11 and 12 are arms 13 and 14, the free margins of which are bifurcated and recessed, as at 15, to provide trunnion pockets for the support of the links 20. Links 20 are T-shaped at their upper ends, the bar part 21 forming tapered laterally projecting journals or trunnions which rest in and are dependingly supported by the trunnion pockets so that said links may swing in said pockets transversely of the coupler axis. At a distance downwardly, somewhat greater than the depth of the coupler shank, upon the links 20, a pair of laterally projecting shoulders 22 are formed, they projecting from opposite sides of links 20 and in the same direction as the journals. These shoulders are preferably upset in the link and taper downwardly to the diameter of the link, as shown clearly in Figure 3. The lower end of the link is screw threaded, as shown at 23, and a keyway 24 is provided therethrough, it having a tapered lower surface for application of similarly shaped tapered key 25.

An upper spring follower 26 is provided, it having a central rectangularly shaped opening 27 of a size to permit its passage on link 20 over the shouldered portion thereof. The lower surface of the remainder of the follower is formed with a recess, of a diameter to receive the upper end of spring 28. The upper surface of follower 26 is provided with a pair of axially aligned spaced trunnion or bearing surfaces 29 on opposite sides of opening 27.

A lower spring seat or member is shown at 30, the upper surface of which is recessed to receive the lower end of the spring 28, and lower surface of which is provided with an annular boss 31 provided with lateral reinforcing webs 32. An axial hole 33 is provided through member 30 of a diameter to slide over the threaded end of link 20 and to be retained thereon by nut 34 which in turn is locked in position thereon by key 25.

The coupler carrier is shown at 40 which is installed between the striker walls 4 and 5 and extends from side to side thereof, and is designed to support the coupler 2. The ends of the carrier are bifurcated so as to straddle the

shank of link 20 and each prong 41 thereof with a concaved bearing portion designed to rest upon one of the tapered trunnions 29 and be resiliently supported thereon, which support will permit lateral angling of the coupler and its support 40. Depending reinforcing webs 42 are provided to strengthen the carrier and upstanding webs 43 are provided on opposite sides of the coupler shank for strength and to insure that the carrier moves laterally with the coupler during any angling motion thereof. Thus when the coupler moves laterally, carrier 40 will be correspondingly moved laterally causing the links to swing on their bearings 15, and, of course, since the carrier is supported by the spring followers 26 resting upon the springs 28, the coupler is cushioned on its support and the springs absorb all ordinary road shocks before reaching the coupler.

As before stated, the opening 27 in spring follower 26 is substantially the same as the cross sectional area of link and stops 22, as shown in Figure 5, so that said follower may be slid in assembling on over the threaded end of the link and up past said stops. When above said stops, follower 26 is turned approximately ninety degrees so that trunnions 29 will then extend parallel with the bar 21 and said follower could then rest on stops 22. In this position when trunnion pockets of carrier rest upon trunnions 29, follower 26 cannot be rotated accidentally. However, when the spring 28, lower member 30 and nut 34 are applied and properly adjusted, the tension of the spring is such as to hold the coupler, carrier and upper follower 26 about one-half inch or so above stops 22. Thus the spring may be compressed up to said half inch or so before the follower would contact said stops and prevent further spring compression. This amount of spring compression is intended to take care of practically all ordinary road shocks to which the coupler may be subjected. When, however, an abnormal shock occurs spring followers 26 would be depressed until they contacted stops 22 when the spring would be relieved of any further compression. This limit is calculated to lengthen the life of the springs immeasurably by preventing any possibility of solid spring compression. Should either or both of the springs 28 break the most that could happen would be for either or both of the followers 26 to drop until resting on stops 22, when the device would still function as a coupler carrier and positioning device. This condition would also prevail even if the key 25, nut 34, lower member 30 and spring 28 were all lost.

It is obvious, of course, that the hole 33 in the lower member could be screw threaded for application to the threaded end of link 20, thus dispensing with the nut 34.

Also is it obvious that the walls of member 30 could be lengthened, as at 35, so as to extend about the spring 28 up to within about one-half inch from upper follower 26, which distance would be the limit of downward compression of the spring, and avoid the necessity of upsetting the links to provide emergency stops for holding the upper followers should the springs break. This modified form of lower spring member is shown in Figures 14, 15 and 16, and is screw threaded for application to the threaded end of the link 50 and the lower surface thereof is in hexagonal form for convenient manipulation by a wrench. In this form, when the spring becomes compressed sufficiently for the upper follower to contact the lower follower, and thus provide the emergency stop, the cushioning feature of the device would then cease to function, but the coupler support and positioning features would continue functioning in the usual way, thereby accomplishing the principal object of the invention. Furthermore in all cases wherein the spring or springs are broken and the upper follower 26 is resting upon lower member 35, the coupler height may be adjusted by screwing the follower 26 up or down on the link 50.

In Figures 17 and 18 a modified form of coupler carrier is illustrated in association with the spring seat or member 35, and wherein the lower surface of the ends 55 are recessed so as to directly receive and rest upon the upper end of springs 28, thus dispensing with the follower 26 but retaining its primary function.

Throughout the specification wherever reference is made to the cushioning means not functioning, this means due to the spring or springs being broken, lost or not yet in place during assembly of the device.

The accompanying drawings illustrate the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof, within the scope of the claims, will occur to persons skilled in the art.

I claim:

1. A coupler carrier and link assembly for use in a railway car swing motion coupler supporting device, said assembly comprising a link, stops upon opposite sides of said link, a follower longitudinally movable and rotatable upon said link, a coupler carrier supported upon said link by said follower, said follower, stops and carrier being constructed and arranged so that said follower may be moved on said link past said stops and then rotated substantially ninety degrees to rest on said stops and support said carrier, and whereby said carrier prevents said follower from rotating to maintain said parts in operative relationship.

2. An emergency railway car coupler support comprising spaced apart links adapted to be swingingly supported from a car part, stops upon opposite sides of said links, followers slidable upon said links past said stops and rotatable upon said links so as to rest upon said stops, a coupler carrier having end portions resting upon said followers, resilient means normally supporting said followers out of engagement with said stops, and members, upon said links, for supporting said resilient means.

3. An emergency railway car coupler support comprising spaced apart links having trunnions at one end adapted to be swingingly supported from a car part, stops upon opposite sides of said links intermediate the ends thereof, a coupler carrier, resilient means encircling each link for supporting said carrier out of engagement with said stops, and adjustable members, upon said links, for supporting said resilient means.

VINTON E. SISSON.

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The following references are of record in the file of this patent:

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1,923,434	Gilpin	Aug. 22, 1933
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