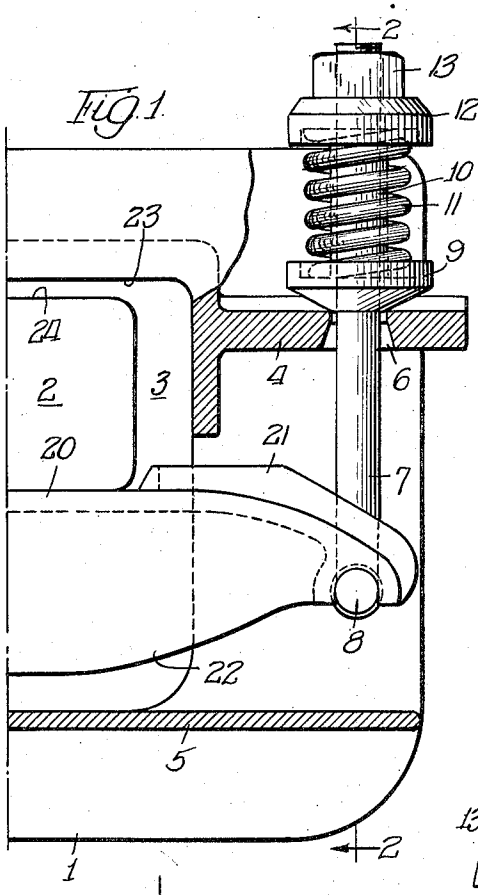
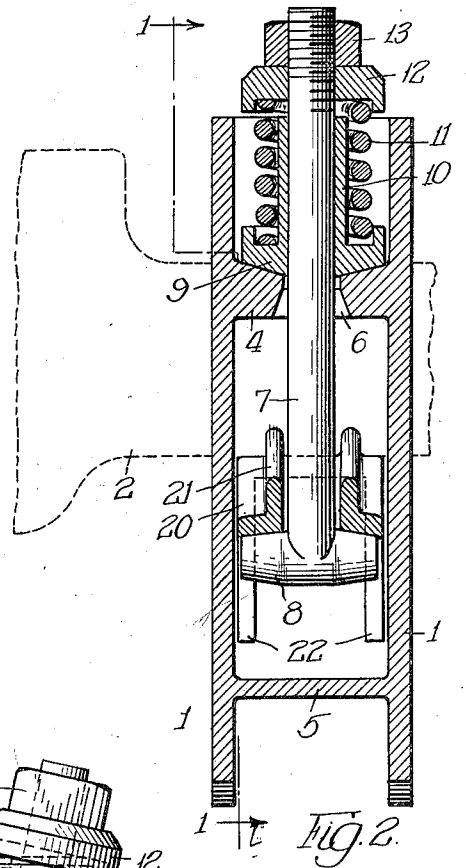
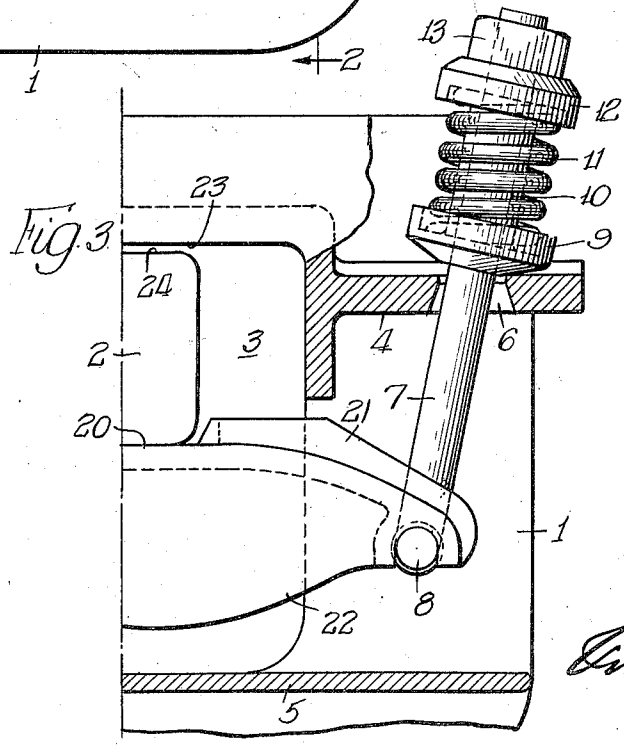
April 18, 1950 V. E. SISSON 2,504,890

CAR COUPLER SUPPORT AND POSITIONING DEVICE

Filed Oct. 31, 1946







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CAR COUPLER SUPPORT AND POSITIONING DEVICE

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6 Claims. (Cl. 213—61)

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This invention relates to coupler supporting and positioning devices for railway car couplers, and more particularly to means to swingably and resiliently support a railway car coupler in such manner that when the coupler is uncoupled, said coupler is maintained by the device in substantially the longitudinal central plane of the car or in what is known in the trade as "coupling range."

More specifically the device comprises a coupler carrier pivotally supported at it sends by links which are pivotally, swingably, resiliently, and preferably adjustably supported intermediate their ends from a member adapted to be fixed to a railway car, such as a striking casting, as shown in the drawings. To provide such a device for so supporting a coupler and maintaining it when uncoupled within said "coupling range" is the principal object of the invention.

Broadly such a device is shown and claimed in my co-pending application, Serial No. 706,982, filed Oct. 31, 1946, and the claims herein are accordingly restricted to the invention illustrated and described herein.

Another object of the invention is to provide such a cushioned coupler support and positioning device wherein should the cushioning means fail for any reason the device would nevertheless function as a coupler support and positioning device. In other words, should a spring break the coupler would still be swingably supported and be returned to "coupling range" by the device.

A further object of the invention is to provide such a cushioned coupler carrier and positioning device of the swing motion type wherein the cushioning means is not distorted during the swinging of the device.

A still further object of the invention is to provide such a cushioned coupler carrier and positioning device wherein provision is made for adjusting the height of the carrier, and thereby the coupler to be supported thereon, above the top of the rail without affecting the resiliency of the cushioning means.

The term "resilient means," as used in this specification and claims, is intended to cover springs, rubber or any other resilient material. Most of these materials, if intermittently compressed to excess progressively lose their effectiveness, and, consequently, it is a further object of the invention to provide means to limit the compression of said resilient means.

In the drawings:

Figure 1 is a half front elevation of my improved device, partly in section, and shown in

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coupling range and as applied to the associated parts of a railway car.

Figure 2 is a section on the line 2—2 of Figure 1, partly in elevation.

Figure 3 is a view similar to Figure 1 illustrating the coupler as drawn to one side as would occur when coupled to another coupler and rounding a curve.

In the drawings the coupler striker is shown at 1—1 and comprises either an integral casting or one built up of welded parts so as to surround the coupler shank 2. Striker 1—1 is substantially rectangular in form and composed of two like spaced plates having aligned openings 3 therein through which the car coupler 2 projects and is longitudinally, laterally and vertically movable therein as is common. The plates comprising the striker are held in spaced relation by suitable webs or shelves, such as shown at 4 and 5, and said striker is securely fixed by any desired means to the end sill or any other fixed part of the car end.

The upper surface of each outer end of the web 4 inclines slightly downwardly toward the longitudinal center thereof, and adjacent each outer end of said web 4 there is provided a through central hole or aperture 6 which is tapered downwardly and outwardly for reasons which will hereinafter appear. Reciprocably mounted in this hole 6 is a link having a T head 8, intermediate the ends of which link is slidably mounted thereupon the sleeved spring seat 9. Spring seat 9 is of substantially inverted T-shape in longitudinal section, the sleeve portion 10 thereof providing an elongated bearing through which the link 7 is reciprocable. The lower surface of the T portion of seat 9 is, in one diametrical direction, milled in two opposite planes to coincide with the inclination of upper surface of web 4, (see Figure 2) to prevent rotation of the spring seat around the axis of the link, while in the diametrical direction at right angles thereto said lower surface of the T portion of seat 9 is arcuate in form, (see Figures 1 and 3) to form a rocker. About the sleeve portion 10 is mounted a coiled spring 11 and the upper surface of the T-portion of seat 9 is provided with an annular recess to receive the lower convolution of said spring 11. A spring cap 12 is provided, having an axial hole therethrough, of a diameter to slide upon link 7, and the lower surface of said spring cap is recessed to receive and rest upon the upper convolution of said spring 11. A nut 13 is applied to the threaded end of the link above spring cap 12 to

hold said parts in their assembled relation, and to regulate the distance the T-link 7 projects below the web 4. If preferred the spring cap may be threaded and provided with surfaces for application of a wrench and thus eliminate the necessity for the nut 13.

The coupler carrier is shown at 20, which is installed between the striker walls 1—1 and extends from side to side thereof. Carrier 20 supports the coupler intermediate of its ends, and the ends of carrier 20 are bifurcated so as to straddle the link 7. The lower surface of the outer bifurcated ends of carrier 20 are capped to provide a concaved bearing portion designed to rest upon the T portion 8 upon opposite sides of link 7, as clearly shown in Figure 2, and be swingingly supported thereby. The bifurcated ends of coupler carrier 20 are provided with upstanding webs 21 adjacent the inner walls of the bifurcation, which strengthen the said ends, and, as said webs 21 terminate adjacent the sides of coupler shank 2, they serve to provide stops to prevent the coupler sliding laterally on said carrier, so that any lateral movement of the coupler forces the carrier laterally therewith, which causes the links 7 to swing, as shown in Figure 3, causing the spring seat 9 to rock on the upper surface of web 4. At the side edges of the carrier there are depending webs 22 to provide greater strength for this element which must support the entire weight of the coupler and receive, in the first instance, all impacts transmitted therefrom. Thus the coupler is supported upon the carrier, which, in turn, is supported upon the links 7, which are resiliently and pivotally mounted upon the webs 4. Consequently, all ordinary road-bed shocks causing up and down movement of the coupler are absorbed by the springs 11. The springs are of a size, length and strength to support the weight of the coupler and carrier a normal distance above the web 5 and below the upper wall 23 of the opening in the striker plates 1—1, so that there is clearance on all sides of the coupler shank to permit average vertical and lateral movement within the striker. It will be noted, however, that the distance between the upper surface 24 of the coupler and the upper wall 23 of opening 3, determines the extent to which the coupler may jump. Similarly the distance between the lower edges of the webs 22 and the web 5 determines the extent to which the coupler may descend. These distances are regulated so that during almost the entire normal movement of the coupler in service no contact will be made by the coupler with any part of the striker, and the shocks from said normal movement will be absorbed by the springs 11.

In the cases of abnormal shocks, it is desirable to prevent breakage of the springs, and also to prevent the coupler and carrier from dropping upon the web 5. Therefore, the sleeve 10 of spring seat 9 is elongated so that when the device is assembled, as shown with the weight of the coupler and carrier contracting the springs, the upper end of the sleeve 10 will be spaced from the spring cap 12 a distance slightly less than the distance between the lower edges of webs 22 and web 5, so that in case of an abnormal shock which could cause a severe drop in the coupler, the spring cap 12 would be pulled down against the spring pressure until it contacted the upper end of sleeve 10, thus abruptly stopping further downward movement of the coupler 2 and carrier 20 before the flanges 22 of carrier 20 engaged the

web 5, as should this occur the carrier might be dragged laterally by the coupler, but neither the coupler nor the carrier could be returned by the device to normal coupling range when free to do so.

To regulate the height of the coupler so as to maintain the same the proper distance above the rail and within coupling range, the nut 13 may be turned on or off as circumstances may require which will correspondingly raise or lower the coupler carrier and thereby the coupler.

When the coupler moves laterally, as shown in Figure 3, it is noted that the whole link and spring assembly rocks on spring seat 9 and that all parts are, therefore, maintained in axial alignment, although the axis has moved from the vertical or normal position, and that when the coupler, while in this position, is uncoupled, the weight of the coupler and carrier on the tipped links will cause the axis of the links to again return to normal vertical position, by gravity. The shorter the distance from the T 8 to the spring seat 9 the more positive will such return be, since, in swinging, the coupler is elevated more. Therefore, the pivot point is arranged intermediate the ends of the links.

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. Means to swingably and resiliently support a coupler carrier from a member adapted to be fixed to a car and provided with spaced shelves having apertures therein; said means comprising an assembly adjacent each end of the carrier, each assembly comprising a spring cap, a spring interposed between said spring cap and a shelf of said member, and a link passing through said spring cap, said spring and said aperture, said link having pivotal supporting engagement with the carrier, and means to hold said elements in operative relationship.

2. Means to swingably and resiliently support a coupler carrier from a member adapted to be fixed to a car, said member provided with spaced shelves each having an aperture therethrough; said means comprising a link extending through one of said apertures and adapted to pivotably suspend one end of the carrier from said member, a cap on said link, a resilient element encircling said link and interposed between said cap and said shelves, means to adjust the height of said carrier without affecting the tension in the resilient element, and means to limit the compression in said resilient elements, and to support said carrier upon accidental failure of said resilient elements so as to maintain a coupler carried by said carrier within coupling range.

3. Means to swingably and resiliently support a coupler carrier from a member adapted to be fixed to a car and provided with spaced shelves having apertures therein; said means comprising an assembly adjacent each end of the carrier, each assembly comprising a rockable spring seat superimposed above and concentric with one of the apertures in said member, a spring resting upon said spring seat, a spring cap, and a link passing through said spring cap, said spring, said spring seat and said apertures, said link having pivotal supporting engagement with the

carrier, and means to hold said elements in operative relationship.

4. A structure as defined in claim 3 wherein the shelves of said member each comprise downwardly inclined oppositely disposed planes sloping toward the aperture therein for engagement with a correspondingly shaped bottom of the rockable spring seat to prevent the spring seat from rotating around the axis of the link.

5. A structure as defined in claim 3 wherein said rockable spring seat is provided with means engageable with said spring cap to limit the downward movement of said cap so as to limit the compression of the spring.

6. A structure as defined in claim 3 wherein said rockable spring seat is provided with a sleeve

surrounding said link engageable with said spring cap to limit the downward movement of said cap so as to limit the compression of the spring.

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