Oct. 8, 1946. K. E. ZEIDLER 2,409,093

CAR COUPLER CENTERING DEVICE

Filed June 3, 1943 2 Sheets-Sheet 1

Fig. 1

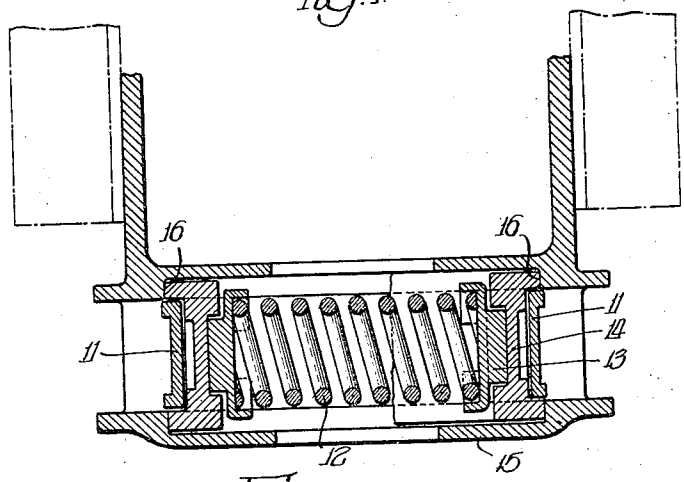
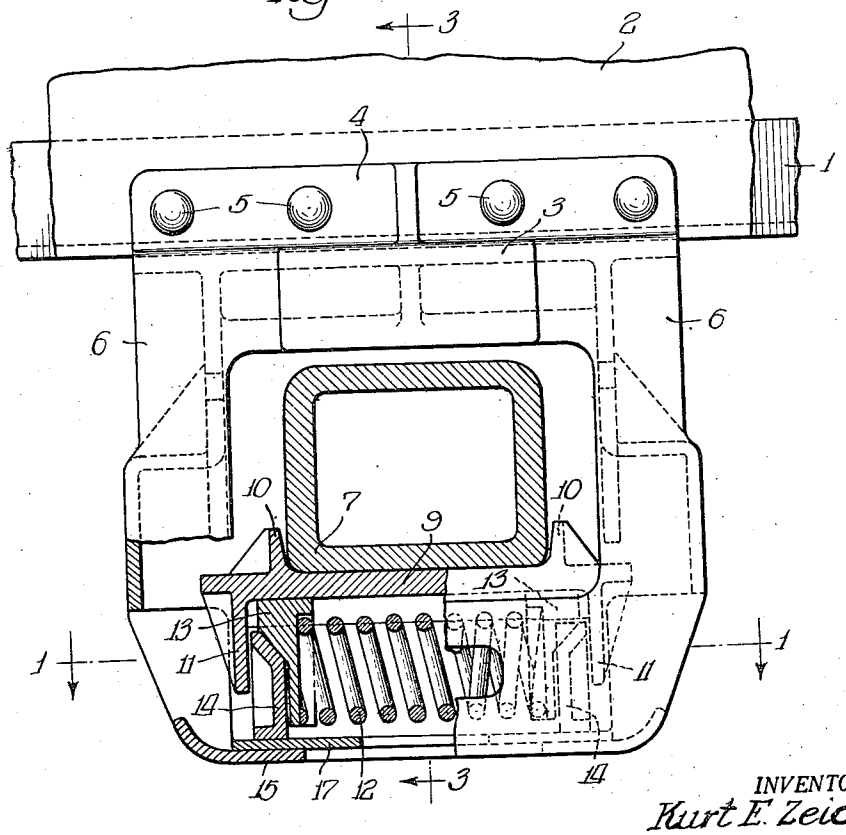


Fig. 2



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Fig. 3.

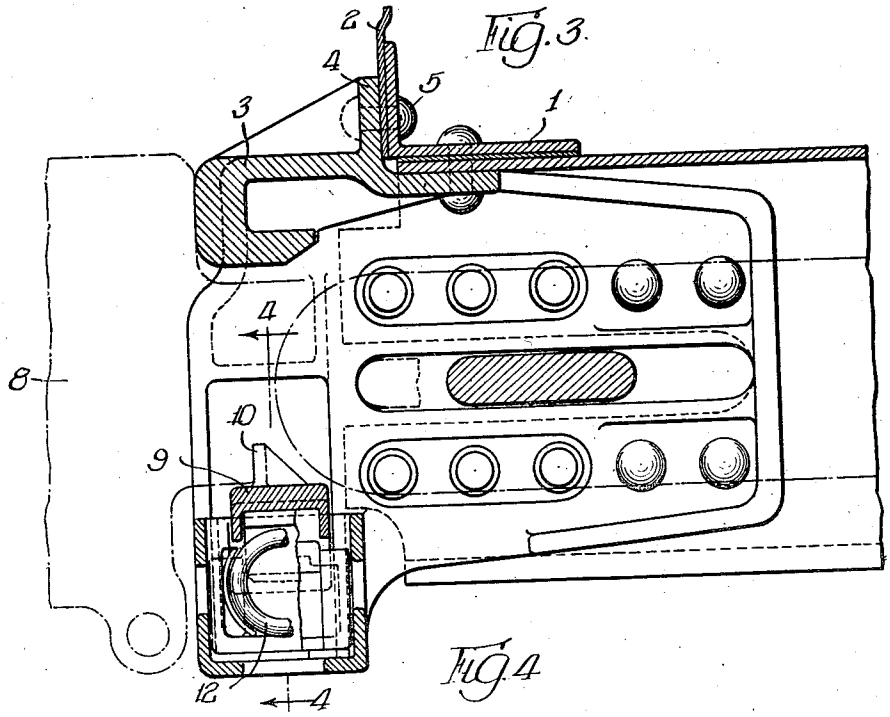


Fig. 4

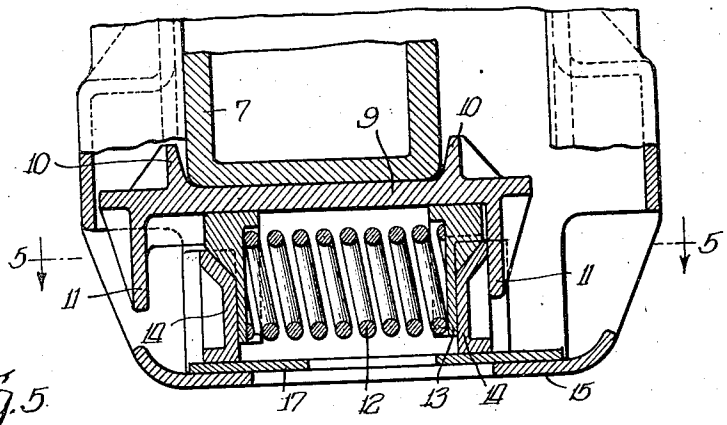
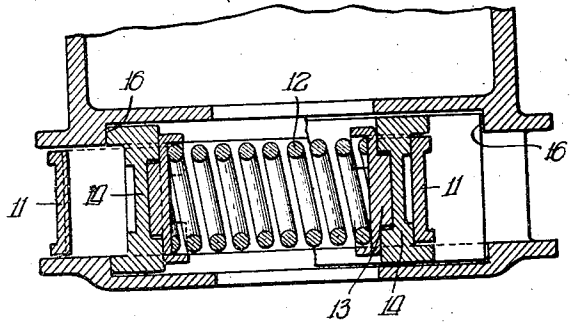


Fig. 5.



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UNITED STATES PATENT OFFICE

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CAR COUPLER CENTERING DEVICE

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Application June 3, 1943, Serial No. 489,559

6 Claims. (Cl. 213—21)

1

My invention relates to means for supporting the outer end of a railway car coupler adjacent its head so that the coupler may have a limited freedom of movement vertically and laterally and thereby be adjustable to the curves and unevenness of the track. One of the objects of the invention is to provide a resilient means for supporting the outer end of a coupler so that when free to do so the coupler will return to a position adjacent the center of the car, or at least to within safe coupling range.

Another object of the invention is to reduce the wear upon the coupler shank and thereby reduce the possibility of breakage of said coupler shank by providing a spring supported coupler carrier permitting limited downward angling of an associated coupler.

Other objects and advantages of the invention will appear in the following description thereof.

Referring now to the accompanying drawings, forming part of this application, and wherein like reference characters indicate like parts:

Fig. 1 is a section on line 1—1, Fig. 2, of my improved coupler centering device.

Fig. 2 is a front elevation of the device, partly in section, as it would appear attached to the end sill of a railway car.

Fig. 3 is a vertical section through the device on the line 3—3 of Fig. 2.

Fig. 4 is a vertical cross section on about the line 4—4 of Fig. 3, showing the parts of the device as they would appear upon a lateral movement of the coupler.

Fig. 5 is a cross sectional view on the line 5—5 of Fig. 4.

In the drawings the numeral 1 indicates the end sill of a railway car, which sill extends from side to side of the car, and to which the bottom of the car end sheets 2 are attached in any desired manner. Of course, the car is provided with the usual center sill and draft gears which cooperate with the coupler shank.

The coupler striking casting is shown at 3 across the top of which is provided a flange 4 secured by rivets 5 or other means to the end sill 1 of the car, which rivets also extend through the end wall sheet 2, as is clearly apparent from the drawings.

This striking casting 3 is somewhat of yoke shape, the downwardly extending laterally spaced arms 6 of which straddle the coupler shank 7 of a coupler head, indicated partially in dotted lines at 8. The coupler shank, adjacent the head thereof, rests upon a carrier, indicated at 9, the upper surface of which is provided with a pair of upwardly extending spaced lugs 10 between which the coupler shank rests. Depending from the under surface of this carrier is a pair of spaced flanges 11, between which flanges are positioned the horizontally disposed helical spring 12 and the vertically reciprocable horizontally slidable spring followers 13—14, at either end of said spring, said followers extending between the carrier 9 and bottom 15 of the striking casting, which bottom extends between the lower ends of the arms 6, thus forming a housing for the centering device. There are a pair of these followers at each end of the spring, each pair having downwardly and inwardly inclined engaging surfaces, the outer followers resting upon the bottom of the housing and the inner followers supporting the carrier 9, and bearing against the ends of said spring so that when the coupler depresses the carrier and thereby lowers the inner followers they will slide down said inclined surfaces and thus laterally compress the spring. When said downward pressure is released, however, the expansive effect of the spring will tend to return the parts to normal, or in other words, raise the coupler to its proper coupler engaging position. The inner vertical surfaces of the inner carriers are provided with peripheral flanges to house the terminal convolution of the spring and thereby always hold it in proper position.

2

During times such as when a train is rounding a curve the coupler will be pulled to one side or the other of the longitudinal center of the car, and, to compensate for this movement, the carrier 9 must correspondingly move because of the lugs 10, but in so doing either one or the other of the depending flanges 11 would move its adjacent pair of followers 13—14 and thus compress the spring to the extent of the lateral movement of the coupler shank. A possible lateral movement and compression of the spring is shown in Figs. 4 and 5 of the drawings. That portion of the striking casting which houses the spring is provided with a pair of spaced shoulders 16 against which the adjacent outer follower 14 abuts, normally, as shown in Fig. 1. When, however, a lateral movement of the coupler takes place one or the other pair of followers will be forced inwardly, compressing the spring, as shown in Fig. 5. When the lateral pressure is released, the expansive effect of the spring will tend to return the parts to normal and thereby the coupler to coupling range.

Since the bottoms of the outer spring followers 14 rest and slide upon the bottom 15 of

the housing, I have provided a wearing plate 17 which may rest upon the bottom 15 between it and the followers 14 and upon which the followers will slide laterally whenever caused to do so by the lateral movement of the coupler shank. The wearing plate will, therefore, absorb any wear caused by the lateral shifting of the coupler and also any violent shocks due to an abnormal downward movement of the coupler sufficient for the bottoms of the inner followers to strike the wearing plate. The distance between the bottoms of the inner followers and the wearing plate defines the limit of vertical movement of the coupler. Lateral movement of the coupler is limited by the shoulders 16 and the maximum compressibility of the spring.

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 carrying device for a railway car having a member rigidly mounted thereupon; said device comprising spaced outer spring followers laterally slidable upon said member and engageable therewith to limit the outward movement of said followers, spaced inner followers supporting a helical spring therebetween, a coupler carrier supported upon said inner followers and adapted to support a vertically and laterally movable car coupler, said inner followers having opposite downwardly and inwardly inclined surfaces engageable with similarly inclined surfaces upon the adjacent outer followers so that downward and/or lateral movement of the carrier is resiliently resisted by said spring and said parts are returned to normal when free to do so.

2. A coupler carrying and centering device for a railway car having a member mounted thereupon; said device comprising spaced outer spring followers laterally slidable upon said member, spaced inner followers supporting a helical spring therebetween, a coupler carrier supported upon said inner followers and adapted to support a car coupler, said inner followers having opposite downwardly and inwardly inclined surfaces engageable with similarly inclined surfaces upon the adjacent outer followers so that downward movement of the carrier is resiliently resisted by said spring, stops on said member limiting the outward movement of each outer follower, flanges depending from said carrier engaging said outer followers respectively, whereby upon lateral movement of the carrier by the coupler one of said flanges moves the adjacent followers and compresses said spring and when the carrier is free to move the spring returns said parts to normal.

3. A coupler carrying and centering device for a railway car having a member rigidly mounted thereupon and adapted to support a coupler shank, said device comprising a carrier having spaced upwardly projecting lugs adapted to receive a coupler shank therebetween and spaced depending flanges, a pair of telescopic followers adjacent each flange, the outer follower of each

pair supported by said member and slidable thereupon and engageable therewith to limit the outward movement of said follower, and the inner follower of each pair supporting said carrier between said flanges, and a coil spring between the paired followers, each pair of followers having downwardly and inwardly inclined surfaces arranged so that a downward and/or lateral movement of said carrier causes compression of said spring and is thereby resiliently resisted so that said parts are returned to normal when free to do so.

4. A railway car coupler carrier for supporting a coupler shank and laterally and vertically movable therewith, depending spaced flanges from said carrier embracing two pairs of horizontally slidable, vertically telescopic spring followers supported by a member, certain of said followers being engageable with said member to limit the outward movement of said certain followers, a coil spring between said pairs of followers, whereby upon vertical movement of said coupler shank the spring followers telescope and compress the spring, upon lateral movement of said coupler shank either flange correspondingly moves its adjacent pair of followers and compresses said spring, and said parts are returned to normal when free to do so.

5. A coupler carrying and positioning device for a railway car having a member attached thereto for supporting said device; said device comprising a coupler carrier arranged to move laterally and vertically with the coupler, a horizontally disposed coil spring, cooperative spring followers at each end of said spring supporting said carrier and movable therewith, certain of said followers being engageable with said member to limit the outward movement of said certain followers, said followers at each end of the spring being formed and positioned to cooperate with each other and the spring so that either a horizontal or vertical movement of said carrier compresses said spring so that said spring resiliently resists either of said movements and returns the carrier to normal when free to do so.

6. A device for supporting a vertically and laterally movable coupler upon a member fixed to a railway car; said device comprising spaced outer followers laterally slidable upon the member, means to limit the outward movements of said outer followers, spaced inner followers, a spring extending between said inner followers and a carrier supported by said inner followers and adapted to support the coupler and move therewith, said inner followers having downwardly and inwardly inclined surfaces engageable with similarly inclined surfaces upon the adjacent outer followers, whereby upon a downward movement of the carrier the inner followers are forced toward each other which compress the spring, said carrier being provided with means which engages one of the outer followers upon lateral movement of the carrier and moves the adjacent inner and outer followers toward the other inner and outer followers which compress the spring so that the compression of the spring resiliently resists either a downward or lateral movement of the carrier and returns the carrier to normal when free to do so.

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