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W. KELSO.  
COUPLING CENTERING DEVICE.  
APPLICATION FILED MAY 8, 1915.

1,155,069.

Patented Sept. 28, 1915.  
3 SHEETS—SHEET 1.

Fig. 1.

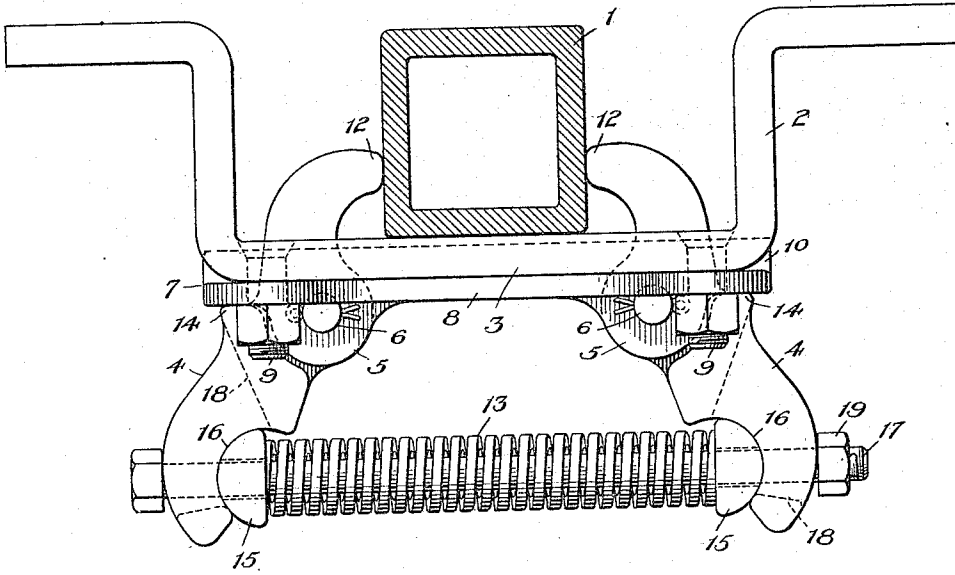
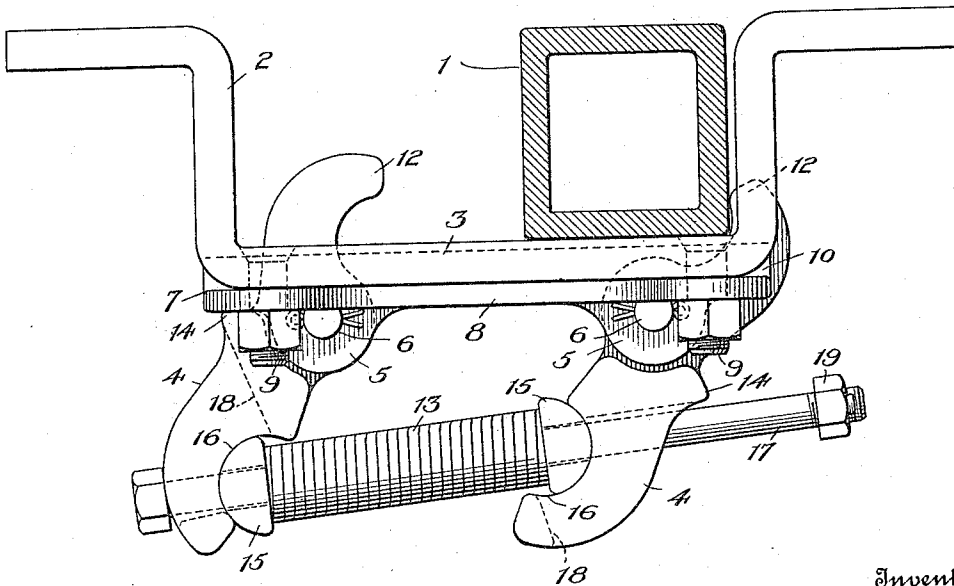


Fig. 2.



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Fig. 6.

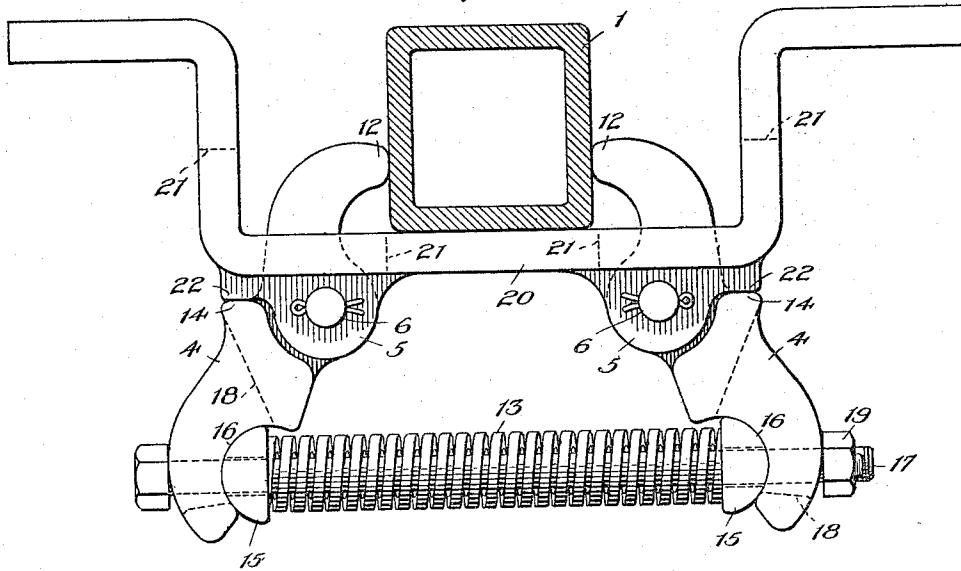
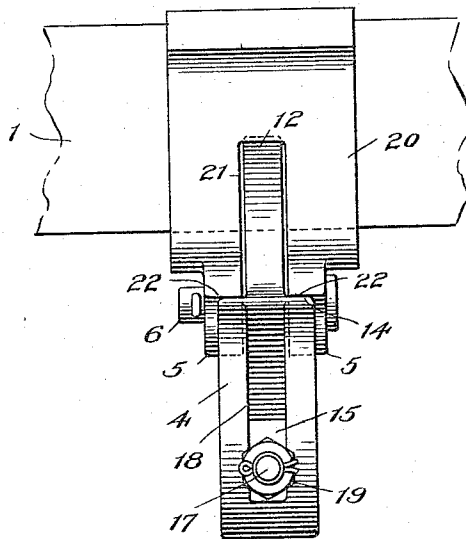


Fig. 7.



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# UNITED STATES PATENT OFFICE.

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## COUPLING-CENTERING DEVICE.

1,155,069.

Specification of Letters Patent. Patented Sept. 28, 1915.

Application filed May 8, 1915. Serial No. 26,755.

*To all whom it may concern:*

Be it known that I, WILLIAM KELSO, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Coupler-Centering Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to centralizing devices for permitting a car coupler to yield laterally when the car or other railway vehicle to which it is attached passes around a curve, and for restoring the coupler to its normal position in the longitudinal axis of the vehicle as soon as the force causing the lateral shifting or displacement of the coupler ceases to act.

The object of the invention is to produce a simple, durable, efficient and comparatively inexpensive device of this character which may be readily repaired should occasion require and in which the parts are so formed, combined and located that it may be readily adapted to old as well as new equipment without interfering with other devices commonly mounted on the ends of cars and without necessitating the expenditure of any considerable labor in placing the device in operative relation with the coupler whose lateral movements it is to control. Generally stated, this object is accomplished by employing a coupler carrier which supportingly engages the coupler while permitting the latter to shift laterally in either direction from its normal position in the center of the car or other railway vehicle, and by pivotally mounting on said carrier a plurality of independently movable levers which are adapted to be engaged and dissimultaneously actuated by the coupler, spring means being interposed between those arms of the levers which do not engage the coupler, and means being provided whereby when the coupler shifts laterally and actuates one of the levers the other lever is restrained from rotation and the spring that is interposed between the levers is consequently energized.

In the drawings illustrating my invention, the scope whereof is particularly pointed out in the claims, Figure 1 is a front elevation of a coupler centralizing device

embodying my invention, the parts being illustrated in the positions they occupy when the coupler is in central position, and the stem of the coupler being also shown in order to indicate its relation to the centralizing mechanism. Fig. 2 is a view similar to Fig. 1, but illustrating the positions assumed by the parts when the coupler is displaced laterally. Fig. 3 is a plan view of the devices illustrated in Figs. 1 and 2, the parts being in normal position. Fig. 4 is a side elevation of the mechanism. Fig. 5 is a detail plan view of one of the parts of the device. Fig. 6 is a front elevation of a modified form of the mechanism; and Fig. 7 is a side elevation of the devices shown in Fig. 6.

The structure illustrated in Figs. 1 to 5 inclusive of the drawings is more especially intended for application to equipment already in service and to that end it is so constructed that the ordinary form of wrought iron carrier now largely used may be availed of as a component part of the device. The structure illustrated in Figs. 5 and 6 is preferred for application to new equipment or where no carrier for supporting the forward end of the coupler has been previously installed.

In the structure shown in the principal figures of the drawings, 1 indicates the stem or shank of a coupler and 2 is a coupler carrier that may be attached to the car or other railway vehicle in any suitable manner. The horizontally extending portion 3 of the carrier, which supportingly engages the lower face of the coupler stem 1, is of sufficient length to permit the coupler to shift laterally in either direction from a central position for the desired distance.

Pivotally mounted upon the carrier are a pair of independently movable levers 4 which are adapted to be dissimultaneously actuated by the lateral excursions of the coupler when moving outwardly from its normal position in the longitudinal axis of the car. As a means of pivotally connecting the levers 4 to the carrier it is preferred to provide the latter with two pairs of downwardly extending perforated lugs 5, the lugs of each pair being adapted to receive corresponding portions of the respective levers 4 and the latter being suitably perforated to receive appropriate pivot pins 6 that preferably extend horizontally through the corresponding lugs 5 in parallelism with

the longitudinal axis of the car. As shown in the drawings, the pivot lugs 5 may, if desired, be formed on a separate member 7 having a bar or flange 8 which extends under the coupler engaging portion 3 of the carrier and which is firmly secured to the latter, as, for example, by means of bolts 9. In order to guide the levers 4 during their oscillating movements and to support them against any strain to which they may be subjected in the direction of length of the coupler when the device is in service, the rearwardly extending portion of the carrier member 7, which is formed with an upwardly projecting lip 10, is provided with laterally extending slots 11 that are open at their outer ends and extend inwardly toward the center of the carrier. The upper portions of the corresponding levers 4 project through these slots and are adapted to oscillate therein.

The portions of the levers 4 which extend upwardly into the coupler receiving space are preferably curved inwardly so that their upper ends 12 are adapted to engage the sides of the coupler 1 when the latter is in normal or central position, such curved form of the upper portions of the levers being advantageous in that, as will be appreciated upon inspection of Fig. 2, the maximum required oscillation of the levers is thereby somewhat diminished, and also because wear due to the sliding action between the levers and the coupler is thus somewhat decreased. The lower arms of the levers 4, which are preferably more widely separated than the upper ends, are yieldingly separated by a spring 13, the extent of separation of such arms being limited by stops or shoulders 14 which are formed on the respective levers 4 adjacent to their pivot pin openings and which are adapted to come into engagement with the under side of the portion 7 of the carrier 2. The spring 13 is preferably seated on cylindrically curved spring-seats 15 which, in turn, are respectively seated in correspondingly curved seats or bearings 16 formed on the inner faces of the levers 4 adjacent to their lower ends. To insure the maintenance of the spring 13 and spring-seats 15 in proper assembled relation with the levers 4 under all conditions of service, it is preferred to employ a bolt 17 which passes through the spring, through perforations in the curved spring-seats 15 and through suitable slots 18 in the levers 4, such slots being extended vertically a sufficient distance to permit the bolt to change its angular position in conformity with the changes in position of the spring 13 attendant upon the rotation of either of the levers 4 by the lateral shifting of the coupler 1. A nut 19 may be employed to maintain the bolt in operative relation with the other parts.

The construction illustrated in Figs. 6 and 7 differs slightly from the form of construction illustrated in the other figures of the drawings. The coupler 1, levers 4, spring means 13, spring-seats 15 and bolt 17 are precisely the same in form and function as the similar parts heretofore described and, accordingly, have been indicated by corresponding reference numerals. The carrier 20, however, differs from the carrier 2 in that it is integrally provided with the pivot lugs 5 for the reception of pivot pins 6 whereby the levers 4 are pivotally mounted on the carrier. The carrier 20 is also formed on each side with slots 21 through which the upper portions of the levers 4 are respectively adapted to extend inwardly so as to engage the corresponding sides of the coupler 1.

Shoulders or stops 22 are provided on the under side of the carrier to engage the corresponding shoulders 14 on the levers 4, thereby limiting the outward rotation of the lower portions of said levers.

The mode of operation of both forms of my invention will be readily appreciated. When the coupler 1 moves laterally, as in passing around curved track, it actuates one or the other of the levers 4, the upper lever arm of such lever being forced outwardly while the lower lever arm thereof swings inwardly. This causes the spring 13 to be compressed, as the stop or shoulder 14 on the other lever, then being in engagement with the corresponding stop portion or shoulder on the carrier, prevents the lower lever arm of such other lever from swinging outwardly. When the force causing the lateral displacement of the coupler ceases to act the expansion of the spring 13 will restore the displaced lever 4 to its normal position, thus returning the coupler 1 to its normal position in the longitudinal axis of the car.

I claim:

1. In a device of the character indicated, the combination with a coupler carrier which is adapted to supportingly engage a car coupler so as to permit the latter to shift laterally with respect to said carrier in either direction from a central position, of a plurality of independently movable levers pivotally connected to said carriers and adapted to be actuated by said coupler, spring means interposed between said levers, and means whereby when the coupler upon shifting laterally actuates one of said levers another of said levers is restrained from rotation to thereby energize the said interposed spring means between such levers.

2. In a device of the character indicated, the combination with a coupler carrier which is adapted to supportingly engage a car coupler so as to permit the latter to shift laterally with respect to said carrier

in either direction from a central position, of a plurality of independently movable levers mounted on the carrier, and spring means interposed between said levers below said carrier, each of said levers being adapted to engage the coupler and each being movable by said coupler in but a single direction and being movable by said spring means in the opposite direction.

3. In a device of the character indicated, the combination with a coupler carrier which is adapted to supportingly engage a car coupler so as to permit the latter to shift laterally with respect to said carrier in either direction from a central position, of a plurality of independently movable levers pivotally connected to said carrier, one arm of each of said levers extending upwardly above the coupler supporting face of said carrier and the other arm of each extending downwardly, and a spring interposed between the downwardly extending arms of said levers and adapted to be energized when either of said levers is actuated independently of the other.

4. In a device of the character indicated, the combination with a coupler carrier which is adapted to supportingly engage a car coupler so as to permit the latter to shift laterally with respect to said carrier in either direction from a central position, of means located below the coupler engaging face of the carrier constituting connections whereby levers may be pivotally connected to said carrier, a plurality of levers extending above and below the coupler engaging face of the carrier aforesaid, and adapted to be engaged and actuated by the coupler, and a laterally extending spring interposed between the lower portions of said levers.

5. In a device of the character indicated, the combination with a coupler carrier which is adapted to supportingly engage a coupler and which is provided on its under

side with means whereby a plurality of levers may be pivotally connected to said carrier, of a plurality of levers pivotally connected to said carrier and each of which extends both above and below the coupler engaging face of said carrier, a spring interposed between said levers below the said carrier, and means for preventing said levers from rotating simultaneously in the normal operation of the device.

6. In a device of the character indicated, the combination with a coupler carrier which is adapted to supportingly engage a car coupler so as to permit the latter to shift laterally with respect to said carrier in either direction from a central position, of a plurality of levers pivotally connected to said carrier and adapted to engage and be actuated by the coupler, means for preventing said levers from rotating simultaneously in the normal operation of the device, a spring interposed between said levers, and a bolt passing through said spring and through apertures in said levers.

7. In a device of the character indicated, the combination with a coupler carrier which is adapted to supportingly engage a car coupler so as to permit the latter to shift laterally with respect to said carrier in either direction from a central position, of a plurality of levers pivotally connected to said carrier, and adapted to be independently actuated by the coupler, and a transversely extending spring interposed between said levers below said carrier, each of said levers extending both above and below the coupler engaging face of the carrier, the upper ends of said levers being adapted to engage the coupler, and the lower ends of said levers when in normal position being more widely separated than the upper ends.

In testimony whereof I affix my signature.

WILLIAM KELSO.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."