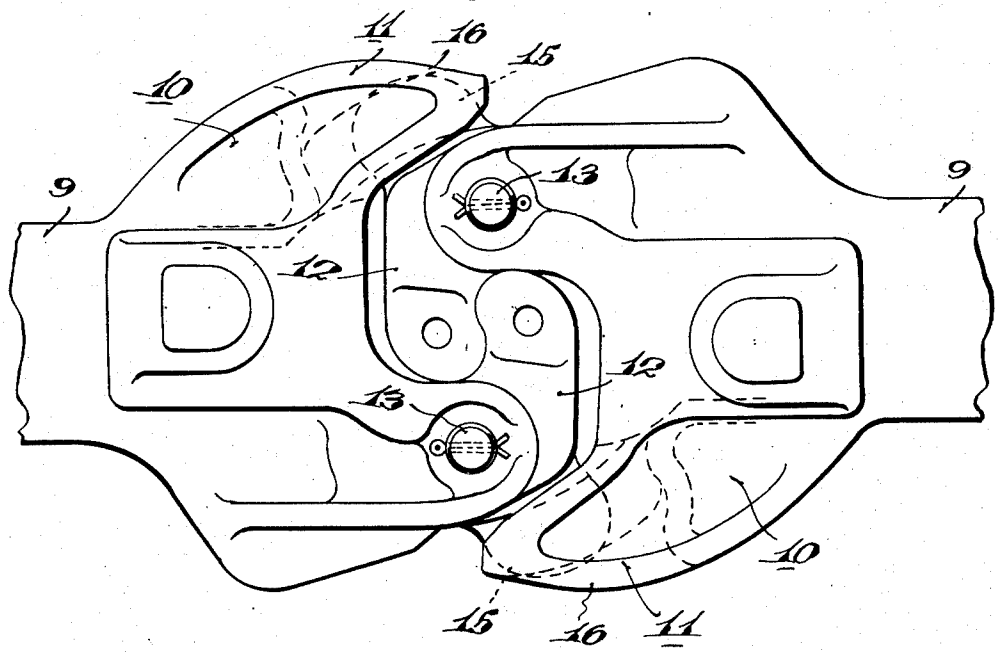
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ANTITELESCOPING COUPLER

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Fig. 1



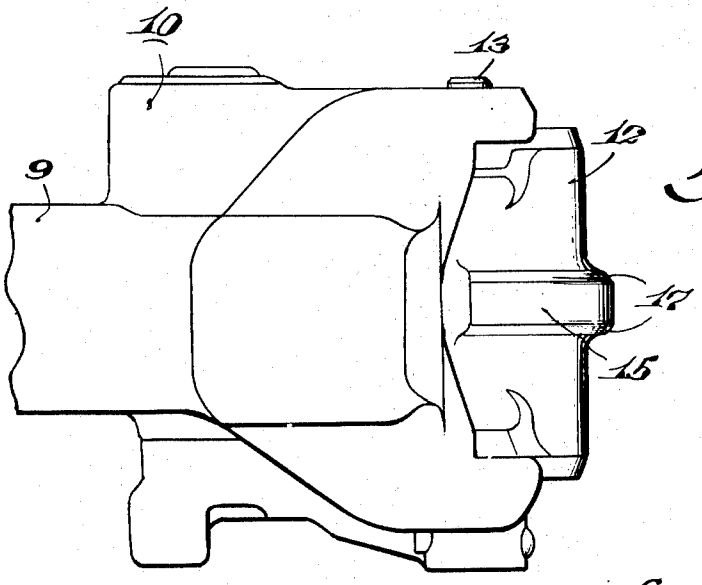


Fig. 2

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ANTITELESCOPING COUPLER

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Fig. 3

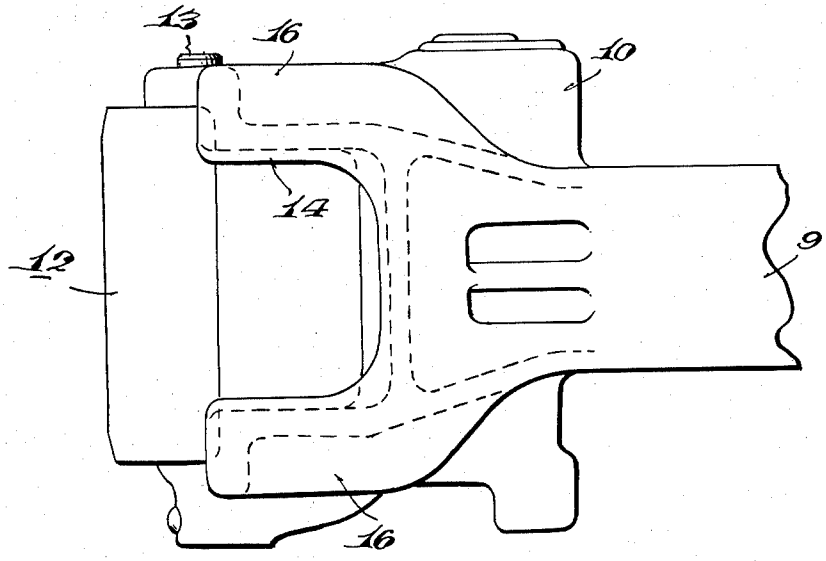
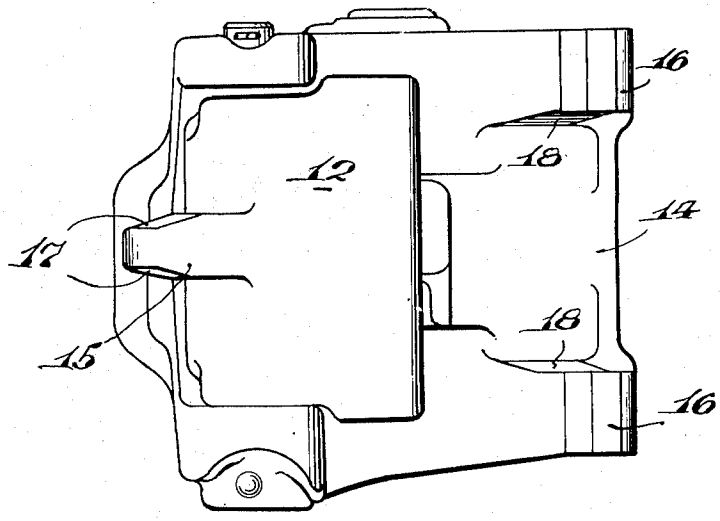


Fig. 4



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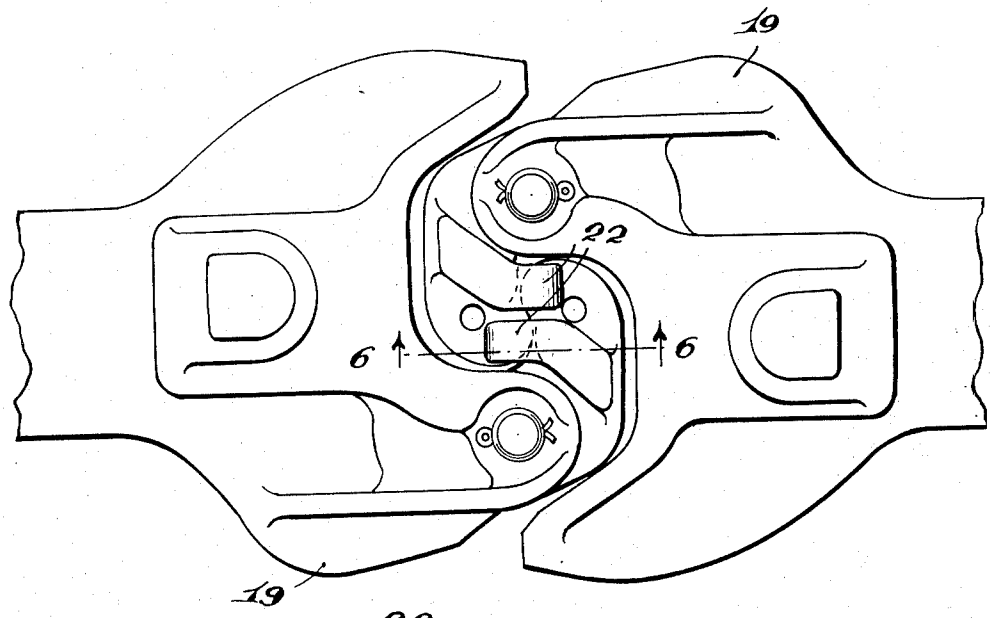
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Fig. 5



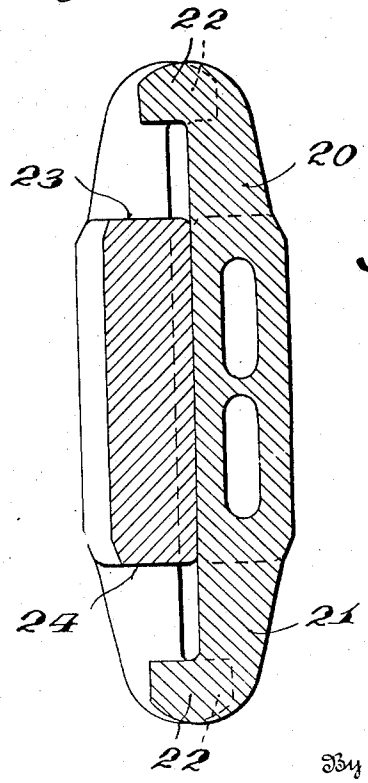


Fig. 6

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Fig. 8

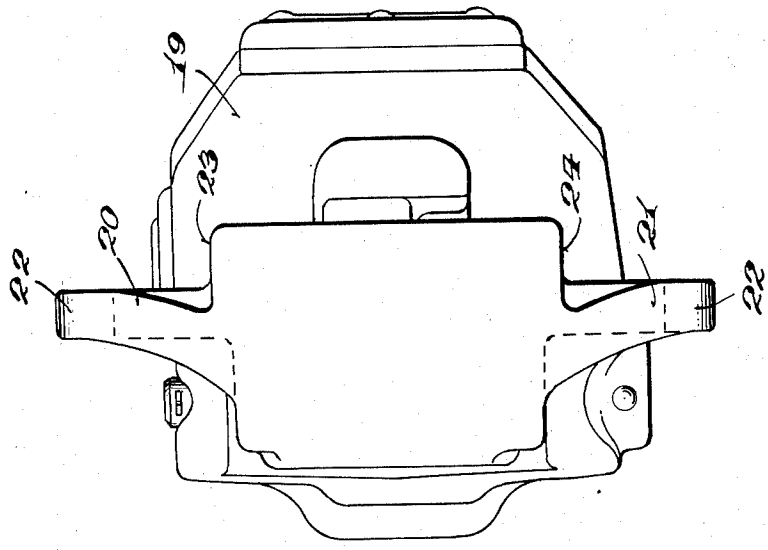
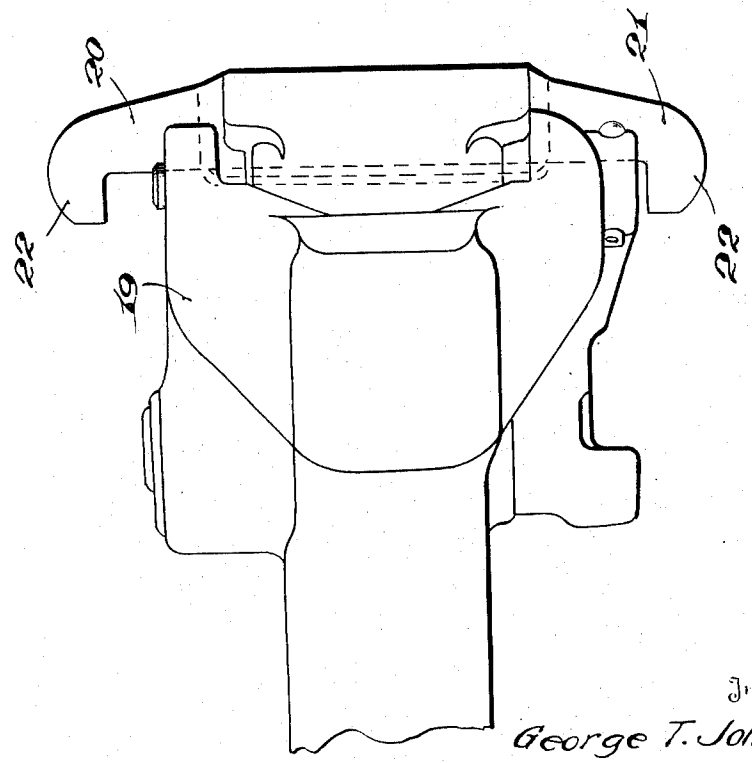


Fig. 7



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UNITED STATES PATENT OFFICE

2,533,940

ANTITELESCOPING COUPLER

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Application April 12, 1944, Serial No. 530,637

7 Claims. (Cl. 213—153)

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This invention relates to railway car couplers and more particularly to couplers provided with means to prevent disengagement of the coupler contours vertically, in case of derailment or wreck. The A. A. R. Standard E coupler head is not constructed to prevent couplers from slipping apart vertically. When the couplers are parted, one car may telescope an adjacent car, or they may derail sidewise and roll over. When couplers are coupled and held against vertical disengagement, it has been proven that the cars stay in better alignment when derailed and materially less damage occurs.

In case of failure of a coupler shank or yoke, the coupler which pulls out can fall on the track and cause derailment. An anti-telescoping device will prevent derailment due to this cause by holding the coupler up until repairs can be made. Therefore, the primary object of the present invention is to provide couplers to prevent uncoupling when either coupler moves too far vertically relatively to the one to which it is coupled.

Another object of the invention is to provide a structure for this purpose in which the knuckle only of the coupler need be altered to accomplish the desired results.

A further object is to provide couplers having a limited movement vertically relatively to one another but which cannot move beyond such limits.

Additional and further objects and advantages inherent in the present invention will become apparent during the following description of embodiments thereof.

The embodiments of the invention to be described herein are illustrated in the accompanying drawings, wherein—

Fig. 1 is a top plan view of the head portions of a pair of connected couplers and illustrating one embodiment of the invention.

Fig. 2 is a side elevation of one of such couplers.

Fig. 3 is an opposite side elevation of one of the couplers.

Fig. 4 is a front elevation.

Fig. 5 is a view similar to Fig. 1, but showing a modification.

Fig. 6 is a vertical sectional view on the line 6—6 of Fig. 5.

Figs. 7 and 8 are a side elevation and front elevation respectively of one of the couplers illustrated in Fig. 5.

Referring first to the form of the invention illustrated in Figs. 1 to 4, inclusive, each coupler comprises a shank 9 having a head 10 provided

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with an integral guard arm 11 and a pivoted knuckle 12, the latter being secured to the head by a vertically disposed pin 13.

In accordance with the invention, the guard arm is bifurcated as indicated at 14 in Figs. 3 and 4, and the knuckle has a lug 15 adapted to enter the recess of the guard arm when the couplers are coupled. It may be seen from Fig. 2 that the lug 15 is arranged midway between the top and bottom of the knuckle and is of considerably less height than the space between the tines 16 of the bifurcated guard arm, to allow vertical play between two couplers and to limit upward and downward relative movement thereof. With a structure of this character, the coupler height (center line of coupler above the rails can vary from thirty-four and one-half inches for light to thirty-one and one-half inches for loaded cars, which permits a variation of three inches. Therefore, the recess or notch in the guard arm normally allows three inches in movement of the lug 15 either up or down. The lug is chamfered at its top and bottom as indicated at 17, so as to allow proper coupling when the coupler is up to three inches out of line. The confronting faces 18 of the tines 16 are also tapered to coincide with the chamfer on the knuckle lugs, so as to provide full bearing.

In the embodiment of the invention illustrated in Figs. 5 to 8, inclusive, the head 19 of each coupler is of standard design, but the knuckles are modified. Each knuckle is provided with an upwardly extending arm 20 and a downwardly extending arm 21, each terminating in a lug 22, and these lugs are spaced respectively from the top 23 and bottom 24 of the knuckle. Hence, when the couplers are coupled, the lugs will overlap the top and bottom of the knuckles and while allowing limited vertical movement of either lug relatively to the other, will prevent such movement beyond the limit allowed.

The advantage of the design illustrated in Figs. 5 to 8, inclusive, is that the anti-telescoping feature may be obtained by merely replacing the knuckle. The knuckle lugs will also function if coupled to a standard knuckle.

It is to be understood that the embodiments of the invention herein disclosed are to be taken as examples only, and that the invention may be embodied in any suitable structure falling within the terms of the appended claims.

What I claim and desire to secure by Letters Patent is:

1. A railway car coupler comprising, a head provided at one side with a guard arm and at the

opposite side with a pivotally mounted knuckle of less vertical overall dimension than said head, said knuckle being provided with upwardly and downwardly extending arms projecting vertically beyond the top and bottom of the head and terminating in horizontally disposed lugs which project toward the head when the knuckle is in a closed position to overlie and underlie a knuckle of another coupler.

2. A car coupler head provided with a pivotally connected knuckle of less vertical overall dimension than said head, said knuckle being provided with upwardly and downwardly extending arms projecting vertically beyond the top and bottom of the head, said arms terminating in substantially horizontally disposed lugs which project in the same direction from the arms toward the head when the knuckle is in the closed position to overlie and underlie a knuckle of another coupler.

3. Connected car couplers comprising, a pair of heads and interconnected pivoted knuckles, one knuckle being provided with upwardly and downwardly extending arms terminating in projecting lugs arranged to limit vertical movement of the other knuckle, said lugs projecting toward the head having the knuckle which is provided with the arms and lugs, and said lugs overlying and underlying the other knuckle.

4. Car couplers having interconnected pivotally mounted knuckles, each knuckle being provided with an upwardly extending arm terminating in a lug which projects over the top of the other knuckle, each knuckle also having a downwardly extending arm terminating in a lug which projects beneath the other knuckle, and the arms and the lugs of one knuckle being laterally displaced from the arms and lugs on the other knuckle.

5. A railway car coupler comprising a head provided at one side with a guard arm and at the opposite side with a pivotally mounted knuckle, said knuckle being provided with upwardly and downwardly extending arms terminating in substantially horizontally disposed lugs which project in the same direction from the arms, said lugs when the coupler is in coupling position extending toward the head and projecting across a vertical plane extending from the axis of the pivotal point of the knuckle to the extremity of the guard arm to overlie and underlie a knuckle of another coupler.

6. Connected car couplers comprising a pair of heads, each having a projecting guard arm and a second arm, knuckles pivotally connected to the second arms for movement about vertical axes, each knuckle being provided with upwardly and downwardly extending arms terminating in horizontally disposed lugs, the lugs of each knuckle when the knuckle is in coupling position extending toward the head which carries the knuckle, all of said lugs when the knuckles of both couplers are in coupling position extending across a vertical plane intersecting the pivot axes of the knuckles, the arms and lugs on one knuckle being laterally displaced from the arms and lugs on the other knuckle, and the lugs carried by one knuckle overlying and underlying the other knuckle.

7. A knuckle structure for railway coupler comprising, a knuckle having top and bottom surfaces, a front face and a rear face on the knuckle, hinge means at one edge of the knuckle, an arm carried by the knuckle adjacent the hinge means projecting above said top surface, a lug carried by said arm, an under surface on said lug spaced above the top surface of the knuckle and extending beyond the rear face of the knuckle, an arm carried by the knuckle adjacent the hinge means projecting below said bottom surface, a lug carried by the second arm, and an upper surface on said second lug spaced below said bottom surface and extending beyond the rear face of the knuckle.

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