Jan. 15, 1935. H. P. PETZNICK 1,987,868

SUPPORTING MEANS FOR TRAIN PIPE COUPLINGS

Filed May 18, 1934

Fig. 1

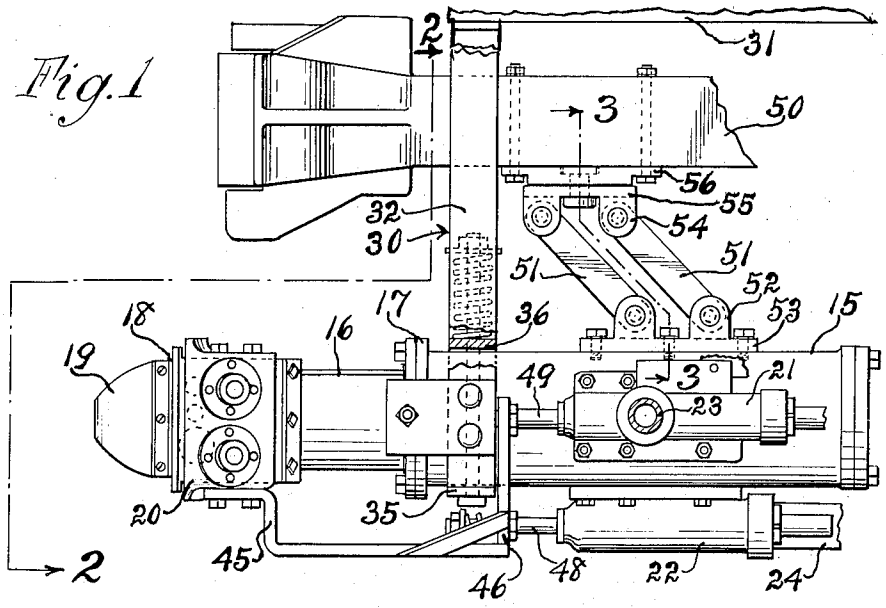


Fig. 2

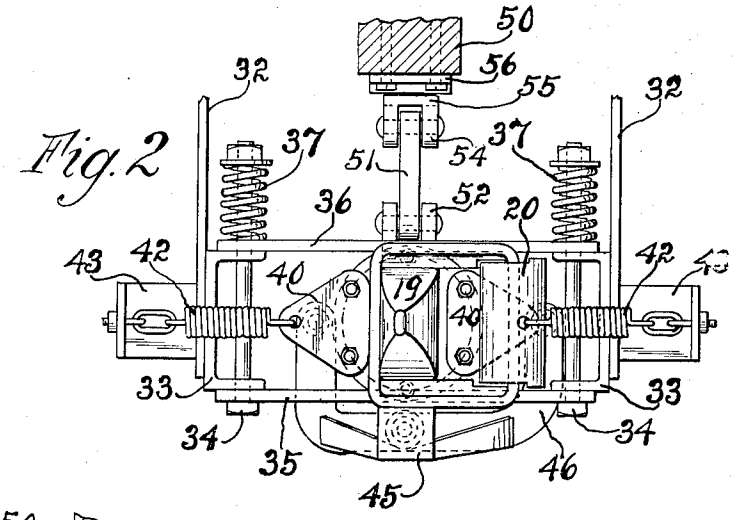
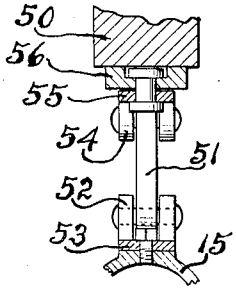


Fig. 3



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SUPPORTING MEANS FOR TRAIN PIPE COUPLINGS

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4 Claims. (Cl. 213—76)

This invention relates to novel improvements in supporting means for train pipe coupling.

One of the main objects of this invention is to provide means for supporting an automatic train pipe coupling on a car in such a manner that it will have free movement so as to effect and maintain proper connection of the coupling heads at all times, even though the drawbars on the coupled cars have an excessive amount of extension and retraction with respect to the cars.

Another object of this invention is to provide supporting means for an automatic train pipe coupling whereby the coupling is largely supported from the car body and not wholly carried by the drawbar, and at the same time is connected with the drawbar so as to move longitudinally therewith, in order to provide for a proper joining and a constant airtight connection between a pair of couplings under the various conditions of operation.

These and various other objects and advantages are attained with this invention, as will become apparent from the following description taken in conjunction with the accompanying drawing wherein my invention is shown in its preferred form of construction, it being apparent that various other forms and modifications may be resorted to for carrying out the objects and purpose of this invention.

In the drawing:

Fig. 1 is a side elevational view, partly broken away, showing my improved supporting means for mounting the train pipe coupling on the car and its drawbar.

Fig. 2 is a vertical cross-sectional view taken along line 2—2 of Fig. 1.

Fig. 3 is a detail sectional view taken along line 3—3 of Fig. 1.

In practice it is found that the difference in position of the drawbar knuckle with respect to the car, from its extreme retracted position to its extreme extended position amounts to several inches, so that the difference of separation between the two adjacent ends of the pair of coupled cars is apt to differ many inches under the various extreme operating conditions. In equipping the cars with automatic train line couplings this condition must be fully taken into account, and the range of movement of the two connected heads of the train pipe couplings must be able to follow such movement of the drawbars to remain in airtight connection at all times. It is therefore expedient to mount the pipe coupling mechanism so that it is movable along with the drawbar, in order to compensate fully for any possible excessive longitudinal movement of the drawbar.

It is consequently the object and purpose of this invention to provide supporting means for the drawbar coupling which is arranged and adapted to move the coupling along with the drawbar, and at the same time to provide means for supporting the larger part of the coupling on the car body, so as to avoid placing the total weight of the coupling or any excessive weight on the drawbar, and also to arrange the supporting mechanism so that the coupling will be supported in a proper position under the various conditions of operation.

The herein disclosed supporting mechanism has been provided and arranged more particularly to accommodate my improved train pipe coupling which is more fully described and explained in my co-pending application for train pipe coupling Serial No. 723,036, filed April 30, 1934, which comprises the casing or cylinder 15 provided with a shank or stem 16 having an inner piston portion slidable therein, said shank extending beyond the outer end 17 of the casing and carrying the coupling head 18 at its outer end. The head is provided with a tapering end 19 at one side and an outwardly curved guide plate 20 at the other side for readily receiving end 19 of the opposite coupling head therebetween. Auxiliary valve casings are provided on the cylinder including the valve casings 21 and 22 provided with the pipes 23 and 24 for conducting air and steam therethrough.

My improved supporting means provided for this train pipe coupling, as illustrated in the drawing, comprises the outer supporting mechanism 30 for supporting the casing underneath the car body 31. This supporting mechanism is substantially the same as that shown and described in my said co-pending application and comprises a pair of hangers or bracket bars 32 which have their upper ends connected to the car body and have channel bars 33 secured to their lower ends. Bolts 34 extend vertically through these channel bars and secure lower and upper cross bars 35 and 36 thereto. Spring means 37 surround the bolts 34 and resiliently press the cross bars 35 and 36 against the channel bars 33. This arrangement permits the coupling head and outer end of the shank to swing vertically and also laterally therein and to compensate for the differences in height of the ends of adjacent cars, and for movement of the cars over irregular portions in the tracks.

In order to center the cylinder and the shank laterally with respect to the frame bars 32 and 33 a pair of plates 40 are secured to the forward

end of the cylinder and have springs 42 connecting them to brackets 43 which are mounted on the members 32 and 33. This permits the cylinder to move laterally in the supporting frame, but retains it normally centered therein.

The cross bars 35 and 36 bear under and upon the cylinder which is slidable laterally and longitudinally therebetween and is limited in its movement rearwardly by the end 17 engaging against the outward sides of said bars.

A bracket 45 has its front end connected to the bottom of the coupler head and has two arms extending rearwardly and connected to a U-shaped yoke 46 which has its branches extending upwardly on the opposite sides of the casing adapted to operate the valve rods 48 and 49, as is more fully described in the co-pending application.

The means provided herein for moving the cylinder or casing 15 and thereby the entire coupling mechanism along with the drawbar 50 comprises link means for connecting the coupling to the drawbar, and in the form illustrated herein this is provided in a pair of parallel links 51 which have their lower ends pivotally connected to a pair of spaced lugs 52 provided on a plate 53 secured upon cylinder 15, and have their upper ends secured between pairs of spaced lugs 54 provided on a plate 55 which is pivotally attached to a plate 56 secured under drawbar 50. This arrangement retains the cylinder and coupling means substantially level and parallel with the drawbar, and at the same time causes the coupling to move longitudinally with the drawbar to compensate for any excessive retracting and extending movement of the drawbar on the car.

This supporting means for the coupling will normally retain the members substantially as indicated in the drawing, and will permit movement of the cylinder laterally of the supporting bracket and the drawbar and also vertically thereof, and will permit a longitudinal sliding movement of the cylinder in the bracket along with the vertical movement thereof, but will retain the cylinder and coupling means in the proper level position to facilitate ready and proper coupling with the coupling head of another car. The shank 16 with its piston portion moves into the cylinder, and the bracket 45 operates the auxiliary rods 48 and 49, for actuating the valve means of the coupling, as is more fully described and claimed in my said co-pending application.

I claim:

1. Supporting means for a train pipe coupling, comprising bracket means mounted stationary on the car body for supporting the coupling to permit free lateral and vertical movement thereof with respect to the drawbar and enable longitudinal sliding movement of the coupling on the bracket means, link means pivotally connected with the coupling, and means pivotally connected to the link means and being pivotally connected with the drawbar, whereby to move the coupling longitudinally along with the drawbar and allow horizontal and vertical swinging of the link means and coupling with respect to the drawbar but retain the longitudinal axes of the coupling and the drawbar parallel.

2. Supporting means for a train pipe coupling, comprising bracket means mounted stationary on the car body for supporting the coupling therebetween to allow free lateral and vertical movement thereof with respect to the drawbar and the car and also allow longitudinal movement of the coupling on the bracket means, a set of parallel links and means for pivotally mounting them on the coupling, and bracket means including a part secured to the drawbar and a part pivoted to said part and pivotally connected to the links, whereby to move the coupling longitudinally along with the drawbar and allow horizontal and vertical swinging of the link means and coupling with respect to the drawbar and car but retain the coupling parallel to the drawbar.

3. Supporting means for a train pipe coupling which is provided with a casing, said supporting means comprising bracket means mounted stationary on the car body and having means therein for supporting the casing and to permit free vertical and lateral movement thereof with respect to the drawbar but enable longitudinal movement of the coupling on the bracket means, a bracket mounted on the under side of the drawbar to be turnable in a horizontal plane, a set of similar links having their upper ends pivotally connected to said bracket, and bracket means pivotally connecting the lower ends of the links to said casing, to move the coupling longitudinally along with the drawbar and provide for free horizontal and vertical swinging of the links and coupling with respect to the drawbar but retain the drawbar and coupling parallel.

4. Supporting means for a train pipe coupling, comprising means mounted stationary on the car for supporting the coupling for lateral and vertical and longitudinal movement, and a plurality of similar parallel links, bracket means pivotally connected to the underside of the drawbar to provide horizontal swinging thereon and being pivotally connected to the upper ends of the links to provide vertical swinging to the latter, and means pivotally connecting the links with the coupling, whereby the coupling moves longitudinally along with the drawbar and remains parallel thereto.

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