July 10, 1951 T. H. BIRCH ET AL 2,559,753

ADAPTER MEANS FOR SUPPORTING THE AIR LINES OF RAILROAD CARS

Filed May 4, 1949 2 Sheets-Sheet 1

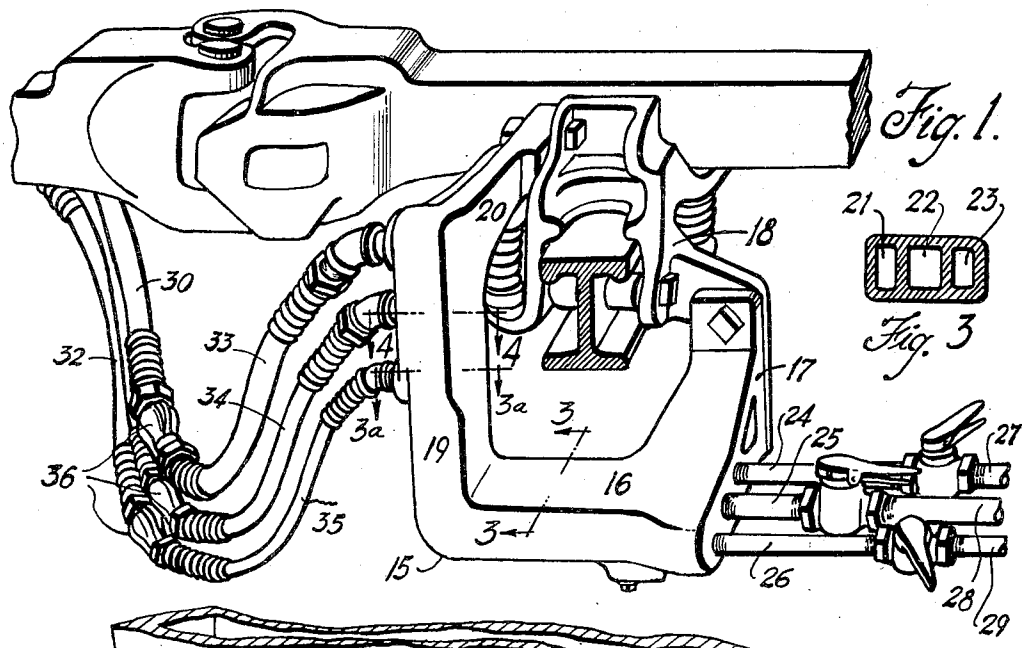


Fig. 1.

Fig. 3

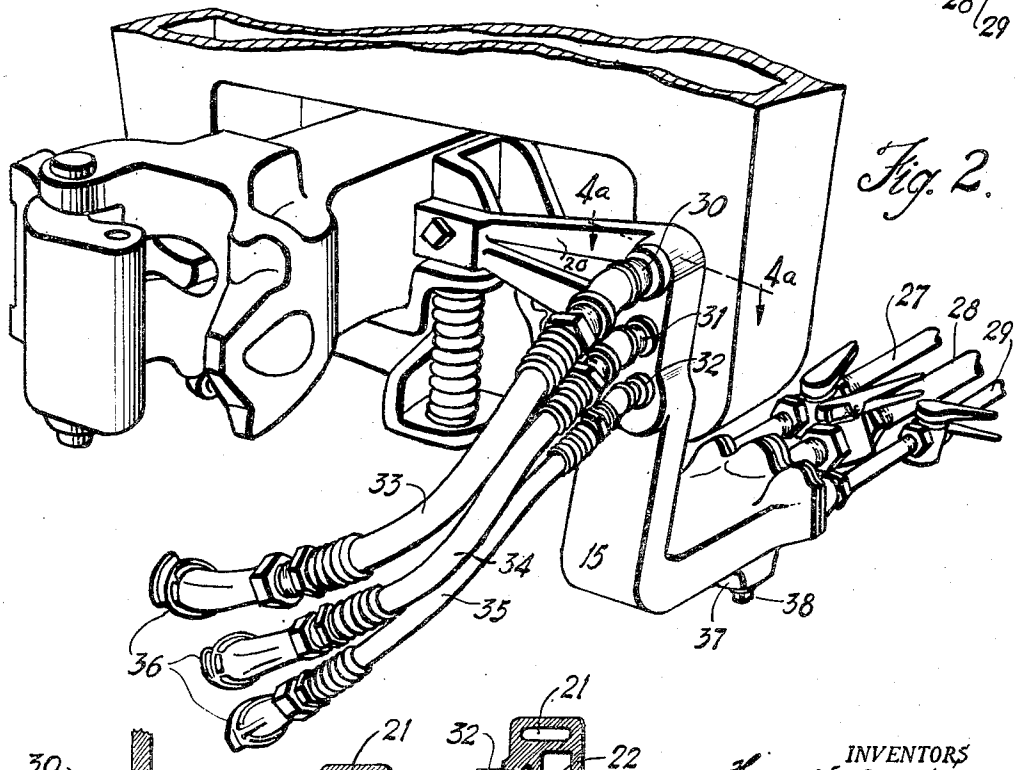


Fig. 2.

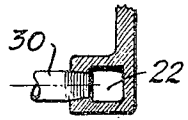


Fig. 4a

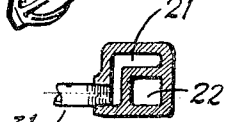


Fig. 4

Fig. 3a

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2 Sheets-Sheet 2

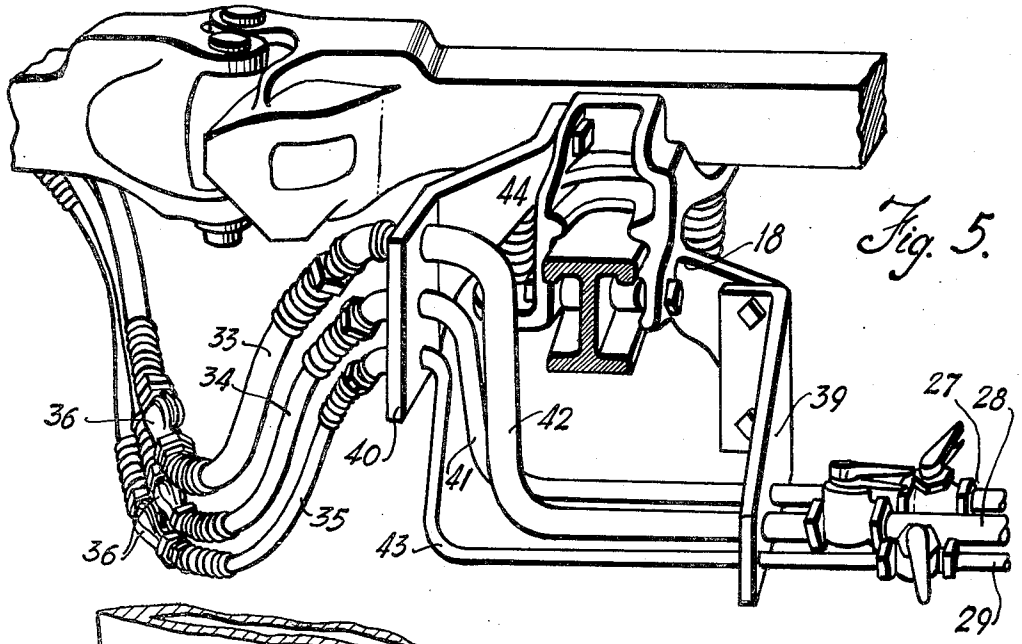


Fig. 5.

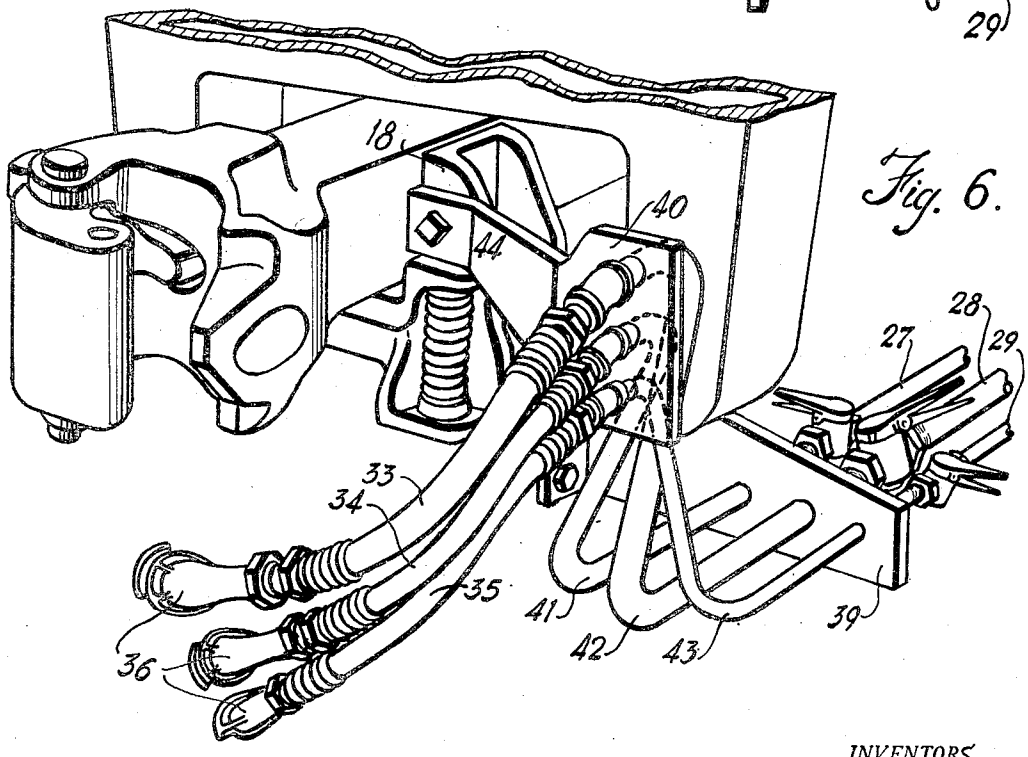


Fig. 6.

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ADAPTER MEANS FOR SUPPORTING THE AIR LINES OF RAILROAD CARS

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2 Claims. (Cl. 285—210)

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Our invention relates to means which may be secured to the coupler carrier at the end of the car and arranged to receive and support the ends of the usual train or air line, the signal line and the straight air line and to also support the coupler carrying hoses at the ends of the car and to position or locate them in keeping with A. A. R. requirements. The invention has for its object the elevation of the depending hose connections so the latter will not contact the usual steam conduit, while at the same time permit the so-called "glad hand" couplers at the outer ends of the hoses to carry out their designed self-locking function as contemplated with the standard A. A. R. location.

Our invention also has for its object the provision of an adapter which may be readily secured to the coupler carrier or to the car coupler so as to move laterally with the coupler and hence will not interfere with or be knocked off by the coupler; our improved adapter also positions the hoses where the free coupler carrying ends of the hoses—when uncoupled—will not dangle or depend in contact with the ties or ground and become badly battered as heretofore was the case when the operator failed to hang up the hoses.

The foregoing objects and advantages of our invention, as well as other advantages inherent in the invention, will all be readily comprehended from the following detailed description of the accompanying drawings wherein:

Figure 1 is a side view in perspective of our improved adapter and a portion of the couplers in coupling condition as viewed from the side of the car, with a portion of the coupler carrier broken away.

Figure 2 is a perspective view as viewed from the end of a car and showing a portion of the car platform casting.

Figures 3, 3a, 4 and 4a are cross-sectional views of the adapter taken, respectively, on the lines 3—3, 3a—3a and 4—4 of Figure 1 and on line 4a—4a of Figure 2, as viewed by the arrows.

Figure 5 is a view similar to Figure 1, showing a modification of the adapter.

Figure 6 is a view similar to Figure 2, of the modification shown in Figure 5.

Our invention, as exemplified in Figures 1 and 2, is in the form of a casting 15 consisting of a horizontal leg 16 having a laterally disposed bracket arm 17 whereby the inner end of the casting is secured to the coupler carrier 18. The horizontal leg 16 of the casting 15 at its outer end terminates in a vertical leg 19 which is also shown provided with a laterally disposed bracket

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arm 20 which is shown secured to the coupler carrier; the bracket arms 17 and 20 rigidly holding the air line coupling member or adapter 15 in associated relation with the coupler carrier of the car.

The legs 16 and 19 of the adapter casting are provided with a predetermined number of air ducts 21, 22 and 23 as shown in the cross section Figures 3, 3a, 4 and 4a; the orifices of the ducts preferably being, respectively, provided with suitable air tight nipples 24, 25, 26 to which the respective air pipes, namely signal air line 27, air line 28 and straight air line 29 are connected through the medium of their usual valve casings. The portion of the ducts in the vertical leg of the adapter have their orifices arranged in planes one above the other, see Figures 2, 3a, on the outer face of the adapter and preferably provided with short air tight nipples at 30, 31, 32 to which the flexible terminals or hoses 33, 34, 35, respectively, are secured; the free ends of the hoses each being provided with the usual "glad hand" or standard type self locking couplers indicated at 36.

The air ducts 21, 22 and 23 are shown in substantially the same horizontal plane as shown in Figure 3, while in the vertical leg 19 of the casting these ports slightly change their configuration and are arranged as shown in Figure 3a taken along the line of the outlet of port 23; the other two ports adjacent their outlets (namely above the outlet of port 23) being then arranged as shown in the sectional views Figures 4 and 4a.

In Figure 1, the respective air hoses are shown coupled to their corresponding hoses of an aligned car.

The inner or horizontal end of the adapter 15 is disposed substantially in the plane of the air pipes mounted in the cross members or cross bearers of the car underframe, while the terminals or air hoses are arranged or supported in an elevated plane sufficiently above the right-of-way so that the free uncoupled outer ends of the hoses will not contact the ties of the right-of-way and at the same time will not contact with the usual steam line or pipe of the coach, which have definite locations in standard car constructions as defined by A. A. R. specifications.

The bottom of the horizontal or lower leg of the adapter preferably may be provided with a sump portion as at 37, provided with a removable drain plug 38 whereby the train lines may be drained.

Our improved adapter is especially applicable to cars provided with what are known as tight

lock couplers employing coupler carriers whereby the various air-line terminals or hoses are mounted very low in order that they may pass under the car platform casting coupler safety carrier. This condition and arangement permits the various air line hoses to have rubbing contact with the steam conduit of the car, causing very rapid wear of the air hoses and of the steam conduit.

As is apparent from the structure shown, this condition is eliminated.

In Figures 5 and 6 we illustrate a modified or fabricated type of adapter consisting of a pair of air pipe holding bracket members or plates **39** and **40**.

The plate **39** is disposed horizontally and apertured to receive the nipples or extensions **41**, **42**, **43** of the air lines **27**, **28** and **29**; and the inner end of the plate **39** is shown flanged and secured to the coupler carrier **18**, see Figure 5.

The plate **40**, disposed in a plane above that of plate **39**, is provided with vertically arranged holes to receive the ends of the extensions or nipples **41**, **42** and **43**; and the plate is provided with a laterally disposed portion or arm **44** whereby the plate is secured to the coupler carrier **18**.

As the bracket plate **40** is arranged in a horizontal plane above that of the air lines and bracket plate **39**, the pipe extensions **41**, **42** and **43** are shown bent upwardly to pass rearwardly of plate **40**, with their immediate ends disposed through the plate and formed to permit the coupling provided hoses **33**, **34** and **35** to be connected to their respective air line extensions.

With our improved adapters the fixedly attached ends of the hoses are considerably elevated above the horizontal planes of the outer coupled ends of the hoses of adjacently coupled cars, as shown in Figures 1 and 5, thereby providing a downward locking pressure (in the manner originally designed) on the well known type of self locking "glad hand" type couplers **36** to maintain their coupled condition in keeping with A. A. R. requirements. With the present day low level arrangement the coupled ends of the hoses too closely approximate a horizontal position and rest on the steam line with the result that the "glad hand" couplers, due to vibration, frequently become uncoupled. This low level arrangement necessitates the uncoupled ends of the air line hoses to be hung up at the end of the car in order to prevent damage to the hoses and their couplers. With our improved adapters these conditions are eliminated and as a result a saving of many man hours is obtained.

We have described what is believed to be the simplest and best adaptations of the invention for use with present day coupler carriers, but modifications are possible and may be made without, however, departing from the spirit of our invention as defined in the appended claims.

What we claim is:

1. Adapter means for the longitudinally disposed air lines and air hoses of a railroad car provided at its end with a coupler carrier comprising an apertured portion disposed at one side, beneath the coupler carrier and arranged in the horizontal plane of the respective air lines of the car and adapted to receive the ends of said lines, said portion having a laterally disposed arm whereby the portion is secured to and supported by the coupler carrier, a vertically disposed apertured portion arranged substantially in the horizontal plane of the car coupler knuckle and outwardly of said first mentioned portion and adapted to have the inner ends of the air hoses secured to its apertures with air conveying ducts between the apertures of both portions.

2. In adapter means for the air lines and coupling hoses of a railroad car provided with a plurality of air pipes secured to the railroad car underframe, the coupling hoses for connecting the respective pipes to similar pipes of an adjacent car and a coupler carrier, adapter means disposed at the end of the car and at one side of the coupler carrier, having a horizontal portion provided with nipples for receiving the ends of said pipes, a second elevated upstanding portion, arranged to extend substantially into the plane of the car coupler, adapted to have the ends of the coupling hoses secured thereto, an intermediate air duct portion for connecting and establishing communication between the respective pipes and their hoses and to restore the air hoses to the conventional A. A. R. location; and laterally disposed brackets at the ends of said portions adapted to be secured to the coupler carrier whereby the adapter is supported in place, the attached ends of the hoses held in proper elevated position to maintain the hose coupled condition and made to move with the car coupler and/or coupler carrier of the car.

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