April 26, 1932. E. C. JACKSON 1,855,188

VEHICLE CONNECTION

Filed Aug. 21, 1929

Fig. 1.

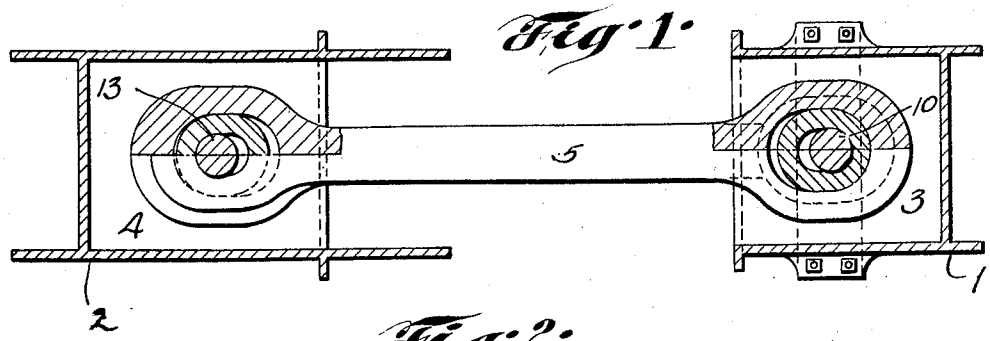


Fig. 2.

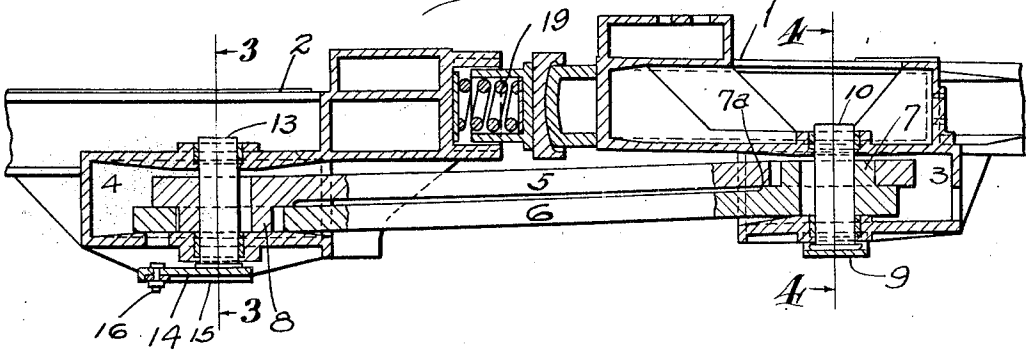


Fig. 3.

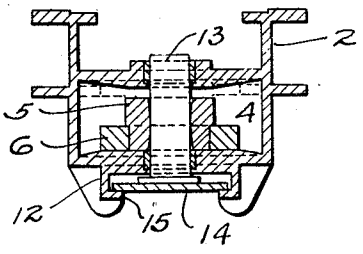


Fig. 4.

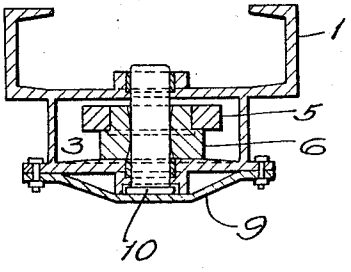
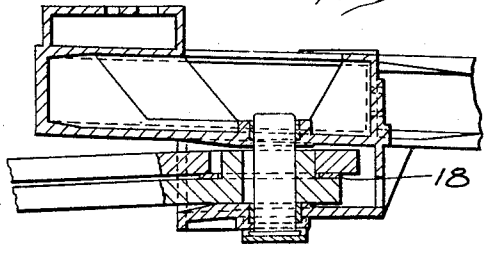


Fig. 5.



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Patented Apr. 26, 1932 1,855,188

UNITED STATES PATENT OFFICE

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VEHICLE CONNECTION

Application filed August 21, 1929. Serial No. 387,465.

My invention relates to draft connections for adjacent vehicles and consists in a novel arrangement of a plurality of identical draw bars and the elements which operatively engage the draw bars with the respective vehicles and, preferably, in the cooperating parts of the vehicles. I have developed my invention particularly in connection with railway engine and tender construction in which certain problems are encountered which have not previously been solved as advantageously as desired.

It has been the custom to couple engines and tenders with two bars of different design, a draw bar and a safety bar. The draw bar carried the whole draft load and the safety bar only came into action after the draw bar had failed. This type of construction requires the railway repair shops to stock supplies of both safety and draw bars and also to stock two different types of pins for each locomotive.

One of the objects of my invention is to avoid the expense and inconvenience of stocking different draw and safety bars, by providing interchangeable draw bars.

Another object of my invention is to avoid the expense and inconvenience of stocking two types of draft pins by making the draft pins interchangeable and also to simplify the pins by eliminating all shoulders on the draft pins and making the draft pin shank of uniform diameter.

Another object of my invention is to save expense of manufacture by providing engine and tender pockets having the same inside contour, thereby necessitating the use of but one core for both pockets.

Another object of my invention is to provide a construction in which a plurality of draw bars may be assembled as a unit and inserted into either draft pocket of two adjacent vehicles with either bar on top.

Another object of my invention is to provide such an arrangement of draw bars that if one bar breaks, the other bar will preserve the correct distance between the engine and the tender so that the radial buffer will continue to function as intended.

Another object of my invention is to decrease the wear on the draft pins and the bearing surfaces of the draw bars by increasing the bearing area on the draft pins and the draw bars.

Another object of my invention is to decrease the vertical space required for the draw bar structure and its pockets.

These and other detailed objects of my invention are attained by the structure illustrated in the accompanying drawings in which:

Figure 1 is a horizontal section through the draft pocket of an engine and tender with draw bars connecting the same as shown in the top view.

Figure 2 is a vertical longitudinal section through the same parts.

Figures 3 and 4 are vertical transverse sections taken on lines 3—3 and 4—4 respectively of Figure 2.

Figure 5 is a section corresponding to the right hand portion of Figure 2, but illustrating a modification in my invention.

The rear end of the engine framing is indicated at 1 and the front end of the tender framing is indicated at 2. These frames are illustrated as comprising castings having vertical and horizontal webs which form draft pockets 3 and 4 respectively. Each frame is provided with a single draft pocket of slightly greater vertical depth than the combined thickness of the two bars 5 and 6 which enter the pockets and transmit the draft from the engine to the tender.

These two bars are duplicates of each other and when placed in position are parallel and substantially horizontal and one presents a bearing surface to the pin in one pocket substantially throughout the length of the pin and the other presents a corresponding bearing surface to the pin in the other pocket. The bar not bearing directly on the pin in one pocket bears on a boss on the other bar which boss surrounds the pin. Hence, both bars are interlocked and function as draw bars. I have shown an upwardly facing boss 7 on the bar 6 in the draft pocket 3, with the shoulder 7*a* on the bar 6 supporting the bar 5 and the bar 5 having an opening receiving the boss 7. The downwardly facing

boss 8 and related structure is inversely arranged in draft pocket 4. The bar assembly can be reversed by turning the bars as a unit around end for end or turning them over so that bar 6 is above bar 5.

The draft pockets in both of the adjacent vehicles are single pockets, integral with the frames of the respective vehicles, and have no bosses. The pin 10 in the engine draft pocket 3 is retained in position by a suitable member 9 bolted to the sides of the pocket in the usual manner. The pin 13 is retained in pocket 4 by a support 14 carried on lips 15 extending downwardly from the pocket wall 12 and the element 14 is held in place with one or more bolts 16.

The vehicles may be coupled or uncoupled upon the removal of either pin 13 or pin 10 and without further manipulation of the draw bars other than to guide them into the pocket during the coupling operation.

Suitable lost motion is provided for between each bar and the pins 10 and 13 to accommodate relative horizontal inclinations of the connected vehicles.

The construction of the engine and tender pockets 3 and 4 is simplified over older form, as the inside contours of the two pockets are the same, requiring duplicate cores.

In Figure 5, the construction is like that of the preferred form except that instead of a shoulder on each boss for spacing the bars from each other, a washer 18 is utilized for this purpose. The thickness of this washer may be varied as desired.

If either draw bar should prove defective, the other bar can serve as a safety bar but ordinarily both bars are functioning and the stresses in each bar are about one half of those present in the usual construction where one bar is primarily intended to transfer the draft forces. If either bar fails, the load on the other bar is increased but this increase in load is not accompanied by any increase in the distance between the tender and engine and th radial buffer spring 19 remains compressed to the same extent as before so that the engine and tender relationship is unchanged.

Obviously, variations in the structure other than those mentioned may be made without departing from the spirit of my invention, and I contemplate the exclusive use of such modifications as come within the scope of my claims.

I claim:

1. A railway vehicle connection comprising duplicate bars, each having an opening in one of its ends and having a boss on its opposite end projecting from the side of the bar a distance corresponding to the thickness of the bar at said first mentioned end, each boss being inserted in the opening of the other bar, there being an aperture through the bar end and boss for receiving a draft pin.

2. A railway vehicle connection comprising duplicate bars, each having an opening in one of its ends and having a boss on its opposite end projecting from the side of the bar a distance corresponding to the thickness of the bar at said first mentioned end, each boss being inserted in the opening of the other bar, there being an aperture through each boss adapted to receive a draft pin and providing a bearing throughout the thickness of the bar and height of the boss above the side of the bar.

3. A combination railway drawbar and safety bar device comprising two bars superimposed upon each other, there being an upstanding boss on one end of one of said bars received within an aperture in the adjacent end of the other of said bars, the outer end of said boss terminating at the outer face of the bar through which it projects, whereby said device may be inserted into and removed from a draw bar pocket having a height corresponding to the sum of the thicknesses of the two bars, and there being an opening extending through the bar and boss forming a draft pin bearing throughout the full height of said device.

4. A device as set forth in claim 3 in which both ends of the device have the boss and bearing structure specified.

5. A device as set forth in claim 3 in which both ends of the device have the boss and bearing structure specified, and in which the bars are duplicates of each other.

6. In a railway vehicle connection, a pair of draw bars arranged one above the other and each having a draw bar pin bearing at one end and a relatively larger opening at the other end, and having an element at the latter mentioned end projecting from the face of the body of the bar, said element including an extension of the pin bearing and being inserted within the relatively larger opening in the adjacent end of the other bar.

7. A structure as set forth in claim 6 in which said bars are duplicates of each other.

8. In a railway vehicle connection, substantially parallel draft bars, an upstanding shouldered boss on one end of the lower draft bar, the adjacent end of the other bar being seated upon said shoulder and having an aperture fitting over said boss, a downwardly extending shouldered boss on the opposite end of the upper bar, the shouldered portion of said upper bar resting upon the adjacent end of the lower draft bar and the boss on said upper bar fitting into an aperture in the lower draft bar, said shoulders spacing the bars apart and said bosses causing both bars to function as draw bars simultaneously.

9. A structure as specified in claim 8 in which said bars are duplicates of each other.

In testimony whereof I hereunto affix my signature this 15th day of August, 1929.

EDWIN C. JACKSON.