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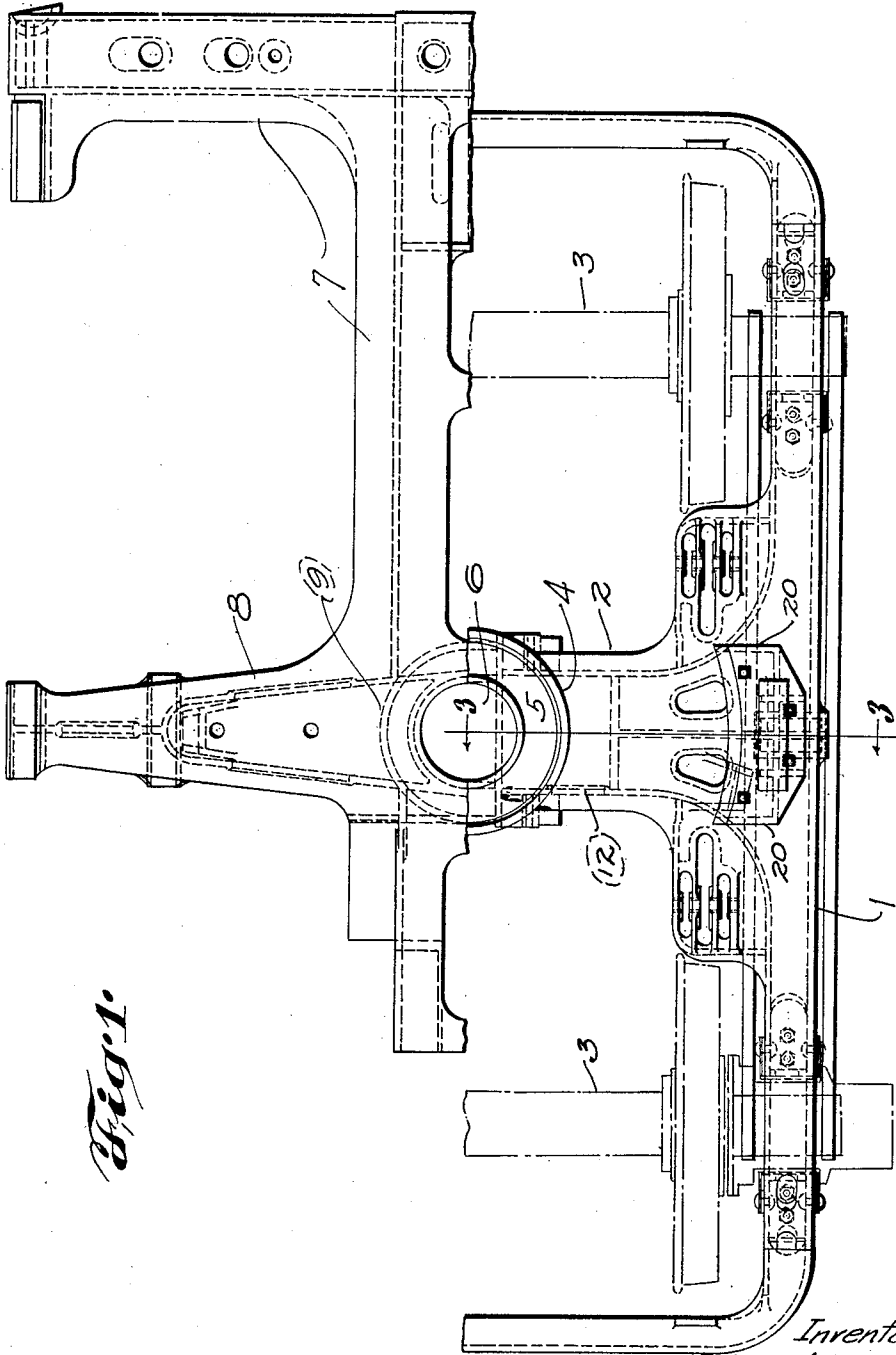
J. J. HARLEY ET AL

1,868,530

## RAILWAY VEHICLE STRUCTURE

Filed April 18, 1931

4 Sheets-Sheet 1



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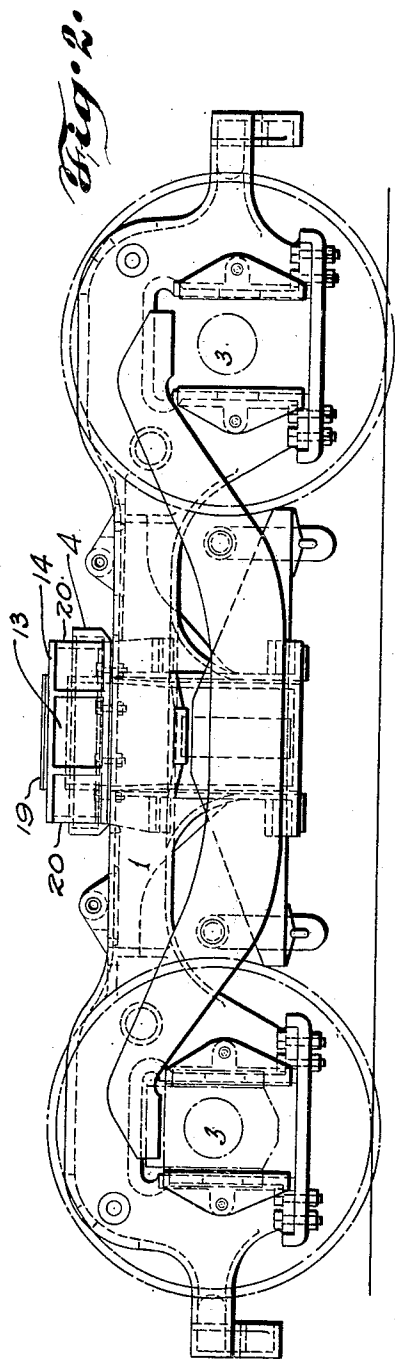
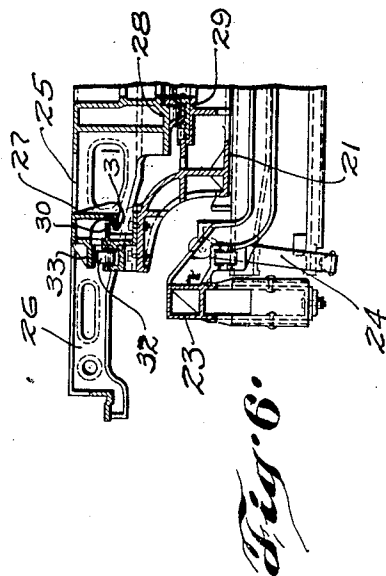
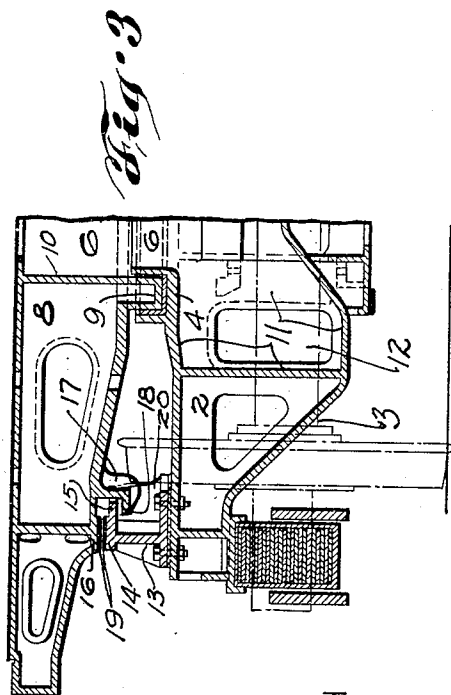
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## RAILWAY VEHICLE STRUCTURE

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4 Sheets-Sheet 2



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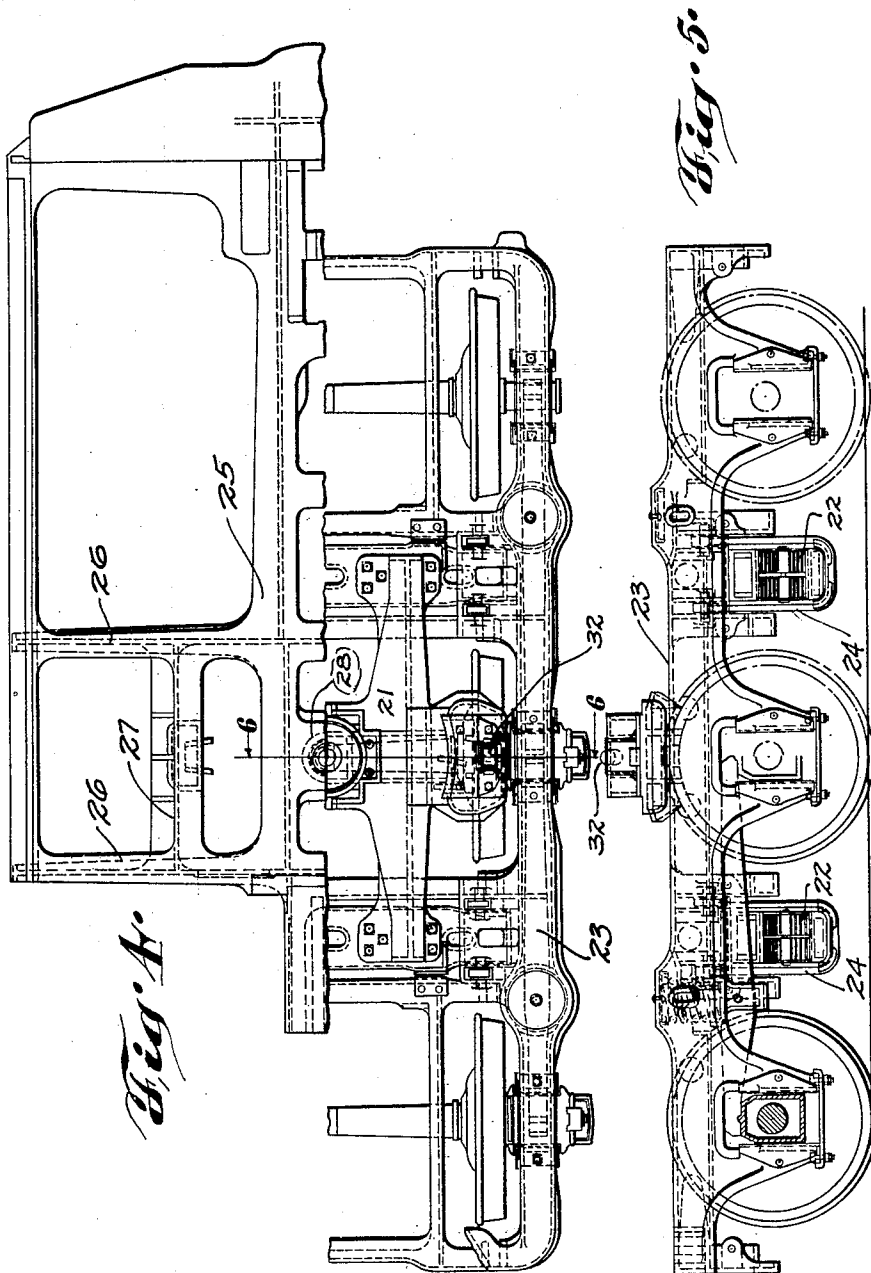
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RAILWAY VEHICLE STRUCTURE

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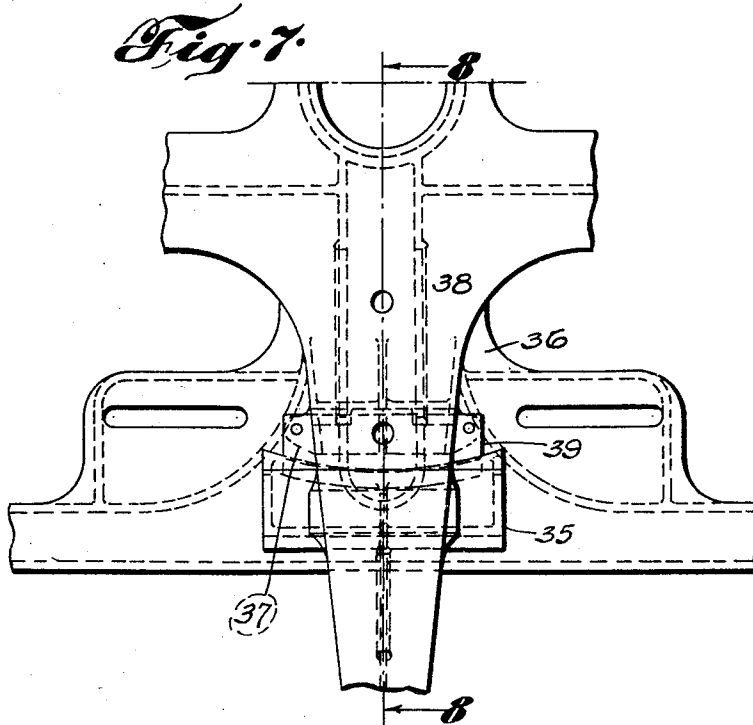
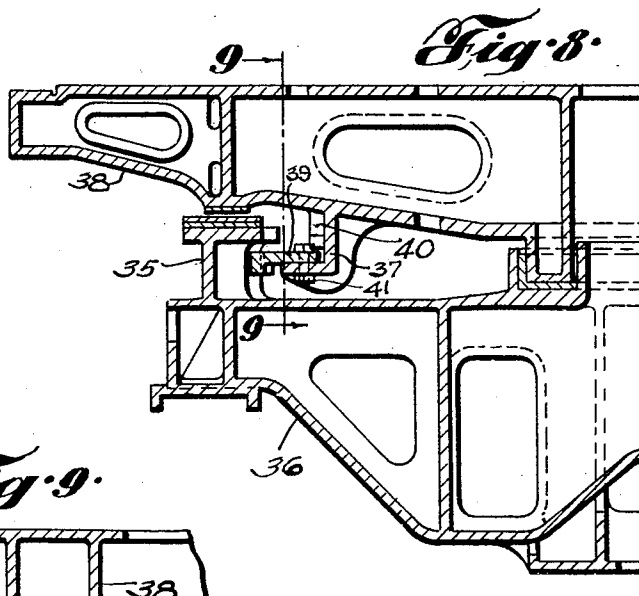
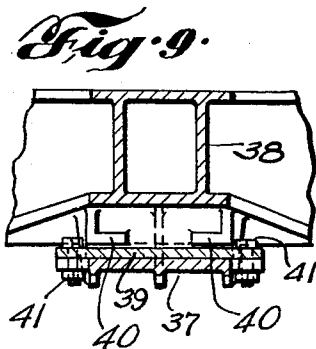
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RAILWAY VEHICLE STRUCTURE

Filed April 18, 1931

4 Sheets-Sheet 4



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## UNITED STATES PATENT OFFICE

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## RAILWAY VEHICLE STRUCTURE

Application filed April 18, 1931. Serial No. 531,164.

The invention relates to railway rolling stock and consists in a novel car body and truck bolster assembly structure.

It is customary to provide means for interlocking the body and truck bolsters to prevent their accidental separation from each other by vertical movement in opposite directions. Usually the interlocking means is associated with the bolster center pin and takes the form of keys passed through slots in the center pin or is embodied in some more complicated center pin structure.

In electric locomotive construction, it is desirable to eliminate the center pin altogether so that an opening may be formed in the center plate structure to provide a conduit for an air stream leading from a blower on the vehicle body to the electric motors of the truck.

The main object of the present invention is to provide interlocking means between the vehicle body and truck bolsters, which means will be spaced from the center plate portions or the center of the bolsters and we accomplish this object by providing interlocking means on each side of the center of the bolsters, such means preferably being in the form of interengaging hook-like devices provided on the body bolster and truck bolster, respectively.

It is a further object of the invention to permit the use of any desired type of side bearing and, with this object in view, we space the interlocking device from the side bearings and, preferably, locate the interlocking device between the side bearings and the center of the bolsters whereby access to the side bearings is facilitated so that inspection and repairs, or lubrication, if desired, may be attended to with minimum difficulty.

These general objects, and other more detailed objects as will appear from the following description, are attained by the structure shown in the accompanying drawings in which—

Figure 1 is a top view of one longitudinal half of a four wheel truck and a top view of the opposite longitudinal half of a body end member mounted on the truck.

Figure 2 is a side elevation of the truck.

Figure 3 is a vertical transverse section taken on the line 3—3 of Figure 1.

Figures 4 and 5 correspond to Figures 1 and 2, respectively, but illustrate a modified embodiment of the invention.

Figure 6 is a vertical transverse section taken on the line 6—6 of Figure 4.

Figure 7 is a fragmentary top view of a body and truck bolster assembly embodying another modification of the invention.

Figure 8 is a vertical transverse section taken on the line 8—8 of Figure 7.

Figure 9 is a detail section taken on the line 9—9 of Figure 8.

The truck shown in Figures 1, 2 and 3 has a frame 1 including a rigid transverse bolster 2 located intermediate the truck axles 3 and provided with a center plate structure 4 having an upwardly facing annular recessed portion 5 surrounding a central opening 6.

The body structure includes sills 7 and a transverse bolster 8 rigid therewith and provided with a depending annular projection 9 adapted to fit in recess 5. The inner side of projection 9 is extended upwardly, as indicated at 10, and forms the wall of an air conduit leading downwardly from suitable piping (not shown) provided on the vehicle body whereby the cooling air stream is conducted through passages formed by the bolster walls 11 to a discharge opening 12, whence it is delivered to the motor.

A bracket 13 is bolted to the top of the truck bolster 2 and includes a side bearing member 14 and an inwardly extending lip 15 forming, with the remainder of the bracket, a hook-like device facing towards the center of the bolsters.

The body bolster includes a side bearing member 16 and a hook-like device 17 spaced inwardly therefrom and having an outwardly extending lip 18. Device 17 faces towards the end of the bolsters and the lips 15 and 18 are arranged to interlock to limit the movement of the bolsters away from each other.

Preferably, side bearing members 14 and 16 are provided with renewable wear plates 19. The distance between the opposing surfaces of lips 15 and 18 is greater than the distance between the side bearing elements so that tilt-

ing of the bolster will result in wear on the elements 19 and not on the lips 15 and 18.

By spacing the interlocking elements 15 and 18 inwardly of the bolster from the side bearings proper, it is obvious that workmen will have little difficulty in inspecting and repairing the side bearings.

Bracket 13 has vertical flanges 20 at its ends arranged to engage the ends of the hook-like device 17 so as to provide an additional interlocking means and to act as stops for limiting the relative pivotal movement of the bolsters.

While we have described above a structure which is particularly designed to accommodate an electric locomotive having an air conduit extending through the center plate portions, it is obvious that the invention may be used in other railway vehicles, irrespective of the center plate construction. Figures 4, 5 and 6 illustrate a modified form of the invention in which the six wheel truck includes a bolster 21 supported on springs 22 suspended from the truck frame 23 by U hangers 24 in a well known manner.

The platform 25 includes a double body bolster structure having spaced transverse arms 26 and interconnecting arches 27 for carrying the side bearings and also having a center plate structure 28 fitting into a corresponding truck center plate structure 29. These center plates will be provided with the usual center pin which, however, will not serve to lock the bolsters against relative vertical movement. This interlocking feature is provided by interengaging elements 30 and 31 on the truck and body bolsters, respectively, which elements are associated with, but spaced from, the side bearing roller 32 provided on the truck and the roller engaging plate 33 provided on the body.

Figures 7, 8 and 9 illustrate another modification of the invention resembling the structure of Figures 1, 2 and 3 but in which the bracket 35 is cast integral with the truck bolster 36. The bracket 37 is also cast integral with the body bolster 38. To provide for assembly of these bolsters with integral brackets, it is necessary that the brackets themselves do not overlap as is illustrated in the detachable bracket structure illustrated in Figure 3. Interlocking of the two bolsters is provided by a separate plate 39 extending between the horizontal portions of brackets 35 and 37 and bolted to the latter. Lugs 40 on bracket 37 extend over the inner edge of plate 39 and limit its upward movement in the event that the plate securing bolts 41 are loose.

This arrangement has an advantage over the structure shown in Figure 3 in that, when the body is lifted, the bracket structure carries the weight of the truck directly and not through the bolt heads.

Various other modifications in the details

of construction and their arrangement may be made without departing from the spirit of the invention and we contemplate the exclusive use of such variations as come within the scope of the claims.

We claim:

1. In combination, a railway vehicle body bolster, a truck bolster associated therewith, a downwardly facing side bearing member on said body bolster, an opposing upwardly facing side bearing member on said truck bolster, a hook-like device on said body bolster having an upwardly facing lip, and a hook-like device on said truck bolster having a downwardly facing lip at a higher level than said first mentioned lip, the adjacent edges of said lips being spaced apart longitudinally of the bolsters, and an element extending over said lip on said body bolster and under said lip on said truck bolster and detachably secured to one of said lips.

2. A structure as specified in claim 1 in which the device to which said element is secured is provided with lugs opposing the lip on that device and overlapping said element to limit the movement of said element away from the lip on that device.

3. A structure as specified in claim 1 in which both of said devices are integral with the corresponding bolsters.

4. A structure as specified in claim 1 in which said devices are integral with their respective bolsters and in which the device to which said element is secured is provided with integral lugs opposing the lip on that device and overlapping said element to limit the movement thereof away from the lip on that device.

In testimony whereof we hereunto affix our signatures this 15th day of April, 1931.

JOSEPH J. HARLEY.

EDMUND S. BECKETTE.