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RAILWAY VEHICLE CONSTRUCTION

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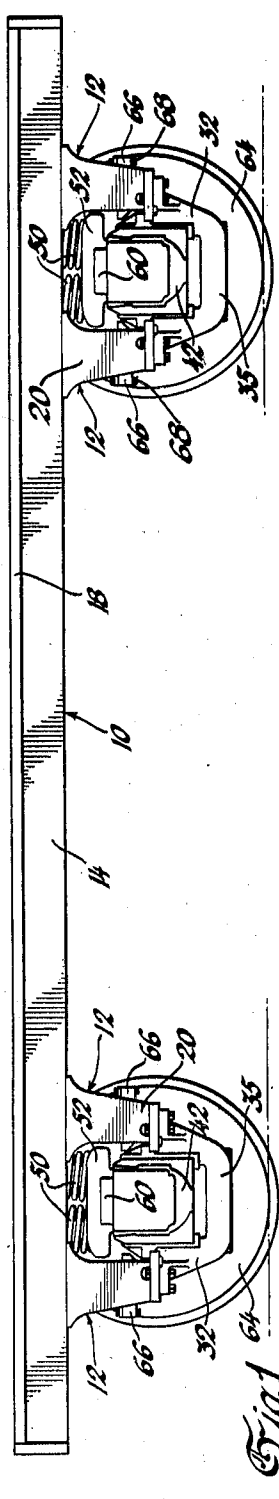


Fig. 1

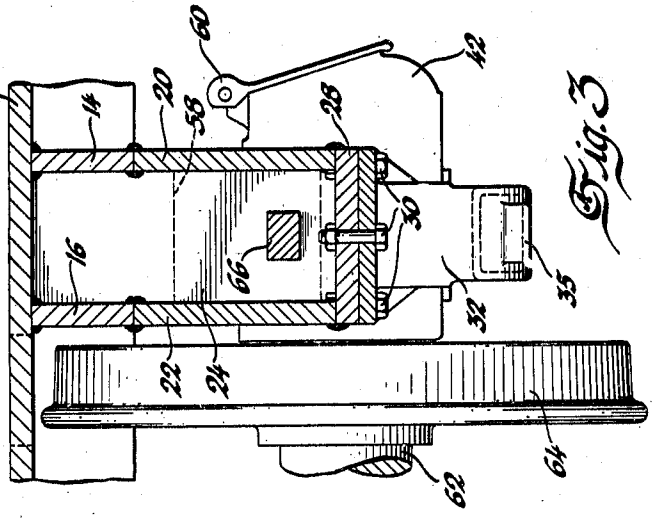


Fig. 3

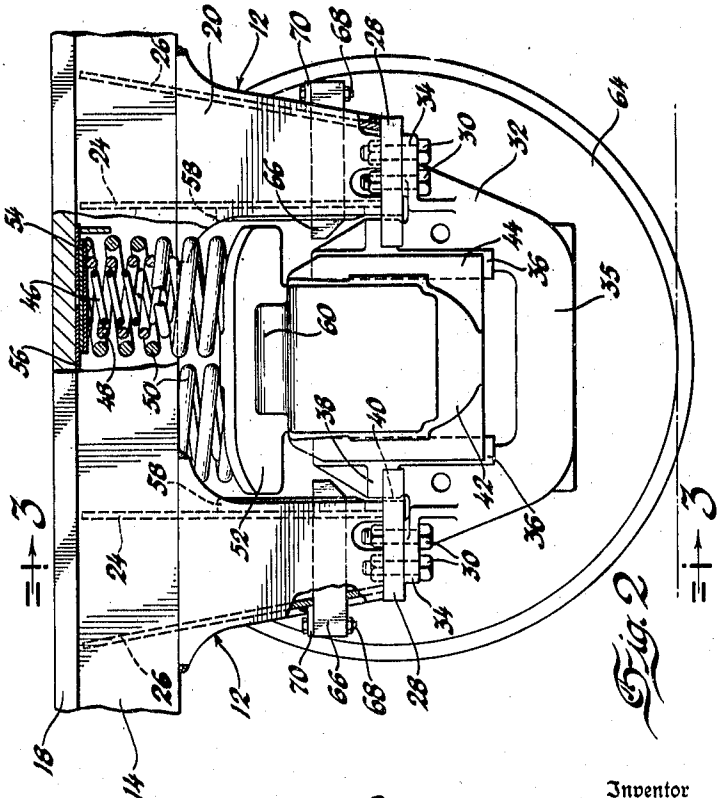


Fig. 2

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RAILWAY VEHICLE CONSTRUCTION

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5 Claims. (Cl. 105—216)

This invention relates to railway vehicle construction and has to do more particularly with the construction of locomotives of the type which are employed for switching purposes.

Such locomotives are frequently required to operate on sections of track where the roadbed is not maintained in good condition so that the track is likely to be quite rough and uneven, and while the spring suspension provided in locomotives of this type is particularly designed to minimize the occurrence of derailments by permitting more than the usual amount of vertical movement of the wheels so that they may move up or down a considerable distance to follow the irregularities in the track, derailments will occasionally occur.

It is therefore an object of this invention to provide a construction wherein the various parts of the locomotive which would normally be likely to be damaged in case of derailment will be protected from injury. This is accomplished by securing a relatively heavy bracing member to the lower ends of each pair of pedestal legs, and forming a skid portion on the bracing member, the skid portion extending downwardly beneath the journal box to a point a few inches above the top of the rail. In the event that derailment does occur, since the skid portion of the bracing member extends to a point considerably below the pedestal legs and other parts of the truck, it will protect them from injury, the skid portion at this time sliding along on top of the track or roadbed. The bracing member itself is of such heavy construction that it will ordinarily be able to withstand the shocks it may be subjected to by coming into contact with stationary objects.

Other objects and advantages of the invention will be apparent upon reference to the following description and accompanying drawing, in which:

Fig. 1 is a side elevational view of the frame and running gear of a railway vehicle of the type described, showing my invention associated therewith;

Fig. 2 is a fragmentary side elevational view of one end of the structure illustrated in Fig. 1, showing the parts on a larger scale; and

Fig. 3 is a sectional view, taken on the line 3—3 of Fig. 2.

The reference numeral 10 designates generally a frame which in the type of switching locomotive construction illustrated extends substantially the full length of the locomotive and serves as the floor or platform thereof. Adjacent each corner of this frame are secured a pair of pedestal legs 12. In the particular embodiment shown, the frame is made up of relatively heavy plates welded together, 14 and 16 being longitudinally extending plates which have their upper edges welded to the top or floor plate 18.

The pedestal legs are each made up of outer plates 20 and inner plates 22, the upper ends of which are welded to the plates 14 and 16 respectively, there being transversely extending plates 24 and 26 having their opposite sides welded to the plates 20 and 22. The upper ends of the plates 24 and 26 extend upwardly between the plates 14 and 16 and are welded thereto. A horizontally extending plate 28 is welded to the lower end of each of the pedestal legs, and serves to close the otherwise open ends of the latter.

Secured to the plates by bolts 30 is a member 32 provided with flanges 34 at its ends, the bolts extending through aligned holes formed in the flanges and in the plates 28. The central part of the member 32 extends downwardly to a point a few inches above the top of the rail to form a skid portion 35, and extending vertically above this are machined guides 36, provided with outwardly projecting portions 38 which are received in notches 40 to properly position the members 32 with respect to the pedestal legs while they are being bolted thereto.

42 is a journal box provided with flange portions 44 which bear against opposite sides of each of the guides 36 so that the journal box is free to slide upwardly or downwardly therein, such movement being yieldingly resisted by two sets of compression springs, each set comprising concentrically arranged coil springs 46, 48 and 50 of different sizes, each of the springs seating at their lower ends in a saddle 52 which rests on top of the journal box, and at their upper ends abutting against shims 54 which are located within a member 56 which bears against the lower surface of the frame plate 18. Wear plates 58 are welded to the plates 24 on the inside of the pedestal legs, these wear plates limiting fore and aft movement of the saddle, transverse movement of same being prevented by lugs 60 formed on the top of the journal box. Axle 62, on which are mounted wheels 64, is supported at opposite ends in bearings in the journal boxes in the usual manner.

To permit removal of an axle and the journal boxes in which it is supported, without requiring that the compression springs be removed, keys 66 are provided, these keys extending through openings formed in the plates 24, 26 and 58. These keys project into the space between the

pedestal legs so that when the bolts **30** are removed and the axle and the journal boxes are permitted to drop downwardly with respect to the pedestal legs, the saddles on opposite sides of the truck will rest on top of the ends of the keys, so that further downward movement of the saddles by the springs is prevented. The keys are held in position by bolts **68** which extend through aligned holes formed in the outer ends of the keys and in lugs **70** welded to the pedestal legs, and the keys may of course be removed to permit assembly or disassembly of the saddles and spring sets within the space between the pedestal legs.

It will be readily seen that the bracing member **32** not only serves to rigidly tie the lower ends of the pedestal legs together to brace them relative to each other, but it also in the event that derailment should occur serves as a skid which will slide over the top of the rail or the roadbed and will protect the pedestal legs or other downwardly projecting parts of the truck from becoming damaged. Also, because the journal box is slidably supported in this bracing member rather than directly between the pedestal legs themselves, there is more space available within which to locate the keys for permitting removal of the axle and journal boxes without necessitating removal of the compression springs and saddles. In the conventional constructions wherein the journal boxes are supported directly between the pedestal legs, such keys would have to be located above the tops of the journal boxes, and this would not be satisfactory since it would not permit the use of long enough springs in the limited space which would be left. In my construction, it will be noted that the keys may be located far enough below the tops of the journal boxes to permit the use of springs which will be long enough to produce a satisfactory form of suspension.

While a specific embodiment of my invention has been shown and described, it will be understood that various changes may be made in the details of construction without departing from the spirit and scope of the appended claims.

I claim:

1. In a railway vehicle construction, a frame having a pair of spaced pedestal legs depending therefrom, a member secured to the lower end of each of the pedestal legs, said member having guide portions extending upwardly between said pedestal legs, a journal box mounted in said member for vertical sliding movement therein, a saddle mounted on top of said journal box and extending over the upper ends of said guide portions, and a plurality of compression springs located between said saddle and said frame.

2. In a railway vehicle construction, a frame having a pair of spaced pedestal legs depending therefrom, a member secured to the lower end of each of the pedestal legs, said member having guide portions extending upwardly between said pedestal legs, a journal box mounted in said guide portions for vertical sliding movement therein, a saddle resting on top of said journal box and extending over the upper ends of said guide portions, a plurality of compression springs located between said saddle and said frame, and means associated with said pedestal legs serving to hold the saddle and compression springs in place while the member and journal box is being removed.

3. In a railway vehicle construction, a frame having a pair of spaced pedestal legs depending therefrom, a member secured to the lower end of each of the pedestal legs, a journal box mounted in said member for vertical sliding movement therein, a saddle resting on top of said journal box, a plurality of compression springs located between said saddle and said frame, and a key extending through each pedestal leg and adapted to engage said saddle to limit downward movement of the latter while the member and journal box is being removed.

4. In a railway vehicle construction, a frame having a pair of spaced pedestal legs depending therefrom, a member secured to the lower end of each of the pedestal legs, a journal box mounted in said member for vertical sliding movement therein, a saddle resting on top of said journal box, a plurality of compression springs located between said saddle and said frame, a removable key extending through each pedestal leg and adapted to engage said saddle to limit downward movement of the latter while the member and journal box is being removed, and means adapted to secure said keys in the above described position.

5. In a railway vehicle construction, a frame having a pair of spaced pedestal legs depending therefrom, a member secured to the lower end of each of the pedestal legs and extending downwardly below the latter to form a skid portion serving to protect the pedestal legs from damage in the event of derailment, said member having spaced guides formed thereon, a journal box mounted between said guides for vertical sliding movement therein, a saddle resting on top of said journal box, a plurality of compression springs located between said saddle and said frame, and means associated with said pedestal legs adapted to engage said saddle to limit downward movement of the latter while the member and the journal box is being removed, said means being removable to permit assembly or disassembly of the saddle and the compression springs in the space between the pedestal legs.

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