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2,600,704

RAILWAY CENTER PLATE LOCKING STRUCTURE

Filed March 17, 1948

2 SHEETS—SHEET 1

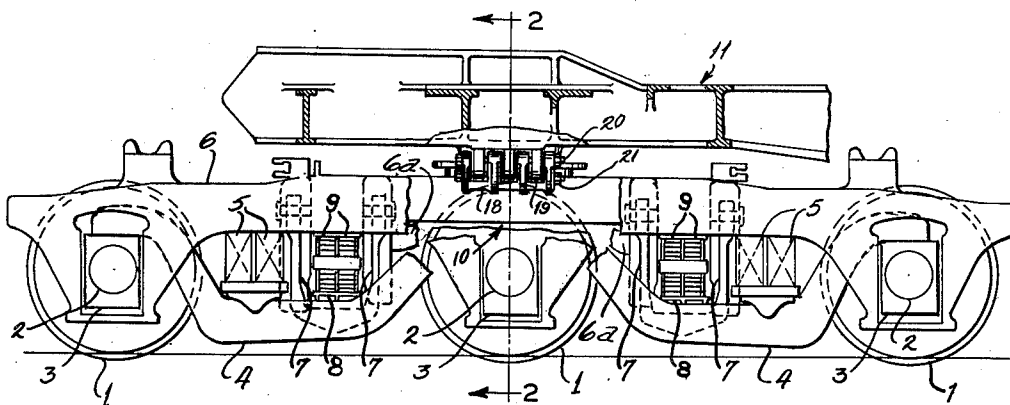


FIG. 1.

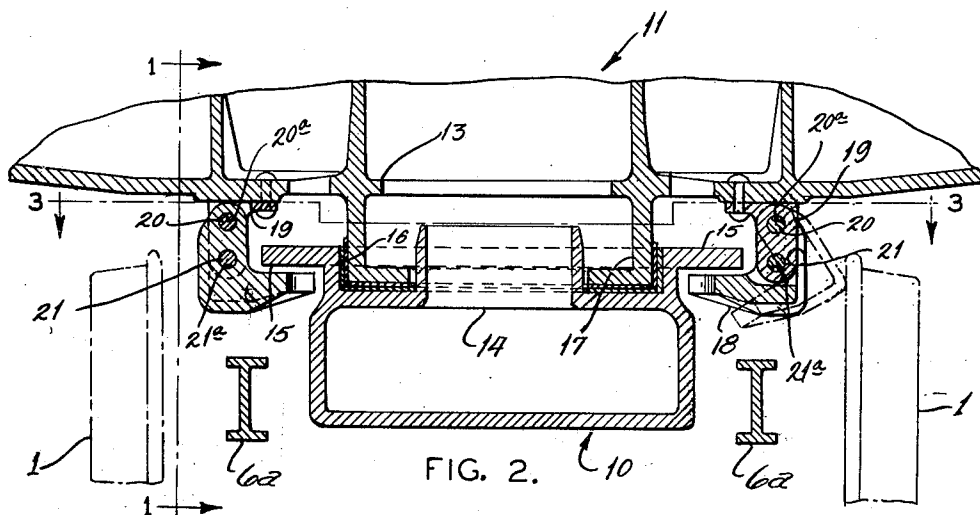


FIG. 2.

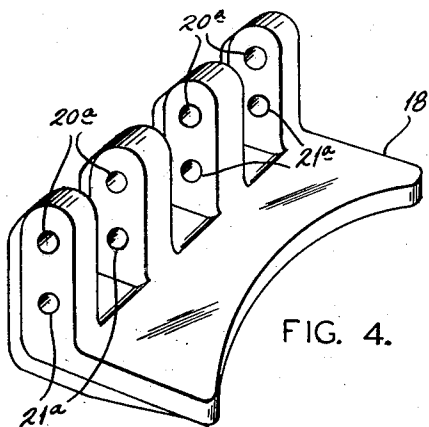


FIG. 4.

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2 SHEETS—SHEET 2

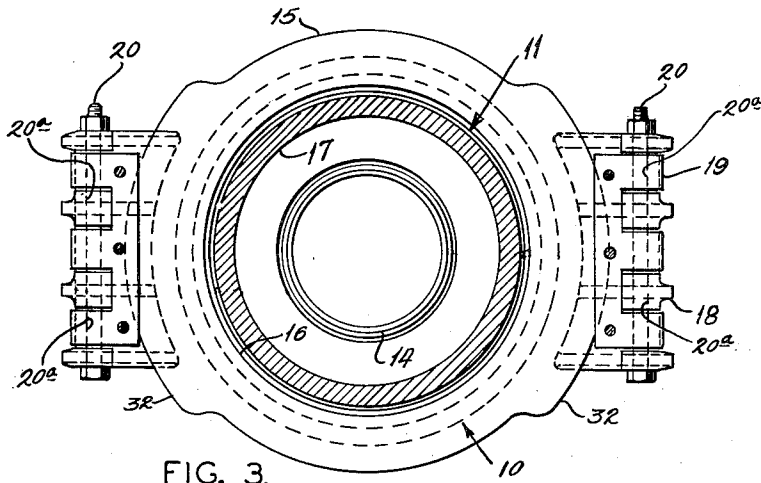


FIG. 3.

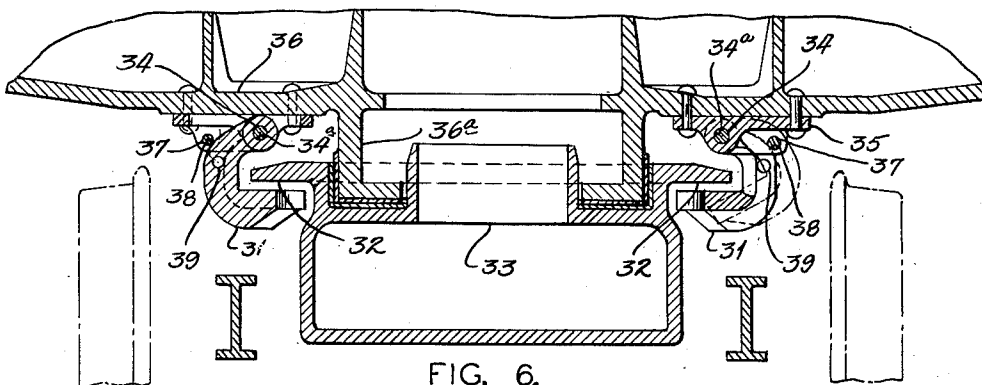


FIG. 6.

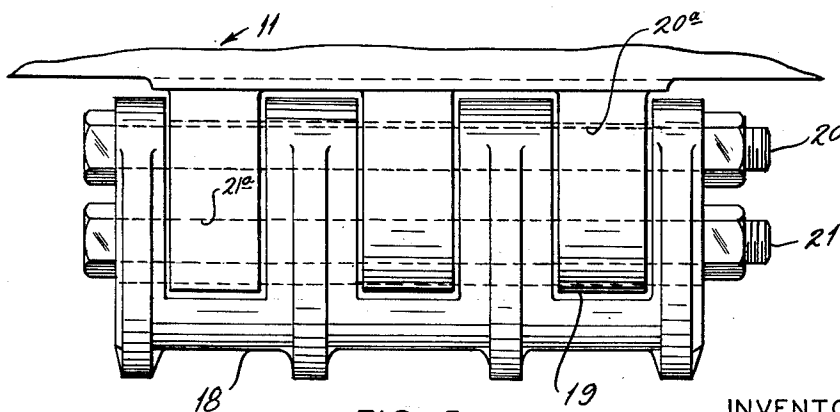


FIG. 5.

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RAILWAY CENTER PLATE LOCKING
STRUCTURE

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5 Claims. (Cl. 105—199)

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The invention relates to railway vehicles having motor driven axles and air conduits through the body and truck center plates and leading to the motors mounted on the truck axles and relates more particularly to center plate locking devices for preventing vertical separation of the body and truck of such vehicles.

The usual center plate locking device must be removed from the vehicle to effect separation of the body and truck center plates. In the earlier structures, the locking device is detached by removing a plurality of vertical bolts. Removal of the locking device is difficult because of the inaccessibility of the bolts. In a later locking device it was necessary to remove a single horizontal elongated bolt extending through aligned openings in the locking device and in a bracket on the body center plate. Attachment of either type of locking device to the center plates is difficult because the locking device must be held manually with its bolt openings aligned with the center plate bracket bolt opening while inserting the bolt or bolts.

The main object of the present invention is to lock the body center plate and the truck center plate against accidental separation and to provide for their intentional separation without removing the locking device from the vehicle. In one form of the invention, a hook-like member is suspended from the vehicle underframe and normally extends under a flange on the truck center plates. The hook-like member may be pivoted to a position to clear the flange for disassembling the center plates.

The above and other objects will be attained by the structure described below and illustrated in the accompanying drawings, in which:

Figure 1 is a side view of a railway six-wheel motor truck and a body underframe constructed according to the invention, a portion being sectioned vertically approximately on the line 1—1 of Figure 2.

Figure 2 is a transverse vertical section taken approximately on the line 2—2 of Figure 1 and drawn to enlarged scale.

Figure 3 is a horizontal section taken approximately on the line 3—3 of Figure 2.

Figure 4 is a perspective of the hook-like member drawn to enlarged scale.

Figure 5 is a detail side view of the hook-like member and its supporting bracket on the underframe.

Figure 6 is a view similar to Figure 2 showing another embodiment of the invention.

The truck, shown in Figures 1—5, includes the

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usual wheels 1, axles 2 and journal boxes 3. Equilizers 4 are mounted on boxes 3 and mount truck springs 5 to carry a truck frame 6. The truck is of the lateral motion bolster type and has pairs of swing hangers 7 at opposite sides of the truck pivotally suspended from the truck frame and supporting spring planks 8, bolster springs 9 and a bolster 10. Frame members 6a extend longitudinally of the truck adjacent the middle wheels. Bolster 10 mounts the cab underframe 11 through a center plate structure including a body center plate 13 rotatable on a truck center plate 14. Truck center plate 14 has an outwardly extending lateral flange 15 and a bearing recess 16 receiving the underframe center plate projection 17.

The center plate locking device includes an elongated substantially L-shaped hook-like member 18 suspended at one of its ends from a bracket 19 on underframe 11 at each side of the body center plate and substantially above a frame member 6a. The associated portions of member 18 and bracket 19 are furcated transversely and the furcations are received one between the other. A horizontal bolt 20 extends through aligned openings 20a in the furcations of member 18 and of bracket 19 and provides a horizontal pivot for the member. The upper end of each furcation of member 18 is curved on a radius substantially about the center of the associated opening 20a.

The lower end of member 18 normally is held directly below flange 15 by a bolt 21 extending through aligned openings 21a in the furcations of member 18 and bracket 19 below bolt 20. Member 18 normally is free of engagement with flange 15 except when the center plates tend to separate vertically.

The center plates 13 and 14 may be disassembled from one another by removing bolt 21 and permitting member 18 to swing by gravity about bolt 20 away from flange 15 and to the position indicated in dot-dash lines in Figure 2. Bolt 21 may be inserted again through the openings therefor in bracket 19, thereby holding member 18 in position to clear flange 15. Since bolt 21 can be removed horizontally, it can be removed and applied much easier than on previous arrangements where the bolts must be removed vertically.

The structure shown in Figure 6 is substantially the same as the structure shown in Figures 1—5 with the exception of the locking device which includes a horizontally disposed substantially U-shaped member 31 at each side of the center

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plate. Each member 31 is suspended by its furcated upper leg from a furcated bracket 35 secured to the body underframe 36 adjacent body center plate 36a. A horizontal bolt 34 extends through aligned openings 34a in the furcations of member 31 and bracket 35 and pivots member 31 to bracket 35. Each member 31 normally swings by gravity so that its lower leg underlies a flange 32 on bolster center plate 33. The lower leg of U-shaped member 31 normally is disengaged from flange 32 and engages flange 32 when center plates 33 and 36a tend to separate from one another.

If desired, a bolt 37 adjacent to and engaging member 31 may be inserted through aligned openings 38 in the furcations of bracket 35 to prevent accidental movement of the lower leg of member 31 from beneath flange 32.

The center plates 33 and 36a may be disassembled from one another by removing bolts 37, if used, and pivoting each member 31 manually away from center plate 33 to the position indicated in dot-dash lines in Figure 6 so that the lower leg of member 31 clears flange 32. Each member 31 may be held in this position during disassembly of the center plates by inserting bolt 37 through aligned openings 39 in the furcated leg of member 31 and through openings 38 in the furcations of bracket 35.

While both hook-like members are arranged to swing by gravity on their pivots to one position or another, this free swinging movement is not essential and the members may be so assembled with their associated structures as to require manual movement to shift them from one position to the other.

The details of construction may be varied substantially without departing from the spirit of the invention, and the exclusive use of those modifications coming within the scope of the claims is contemplated.

What is claimed is:

1. In a railway vehicle, a truck including a center plate with an outwardly extending flange, a vehicle body having a center plate rotatable on said truck center plate, and a hook-like member pivotally attached to the body between said center plates and the side of the body and normally positioned beneath said center plate flange to prevent vertical disassembly of said truck and said body, said hook-like member being pivotable to a position to clear said flange for vertical disassembly of said center plates with said member secured to the body and removable means associated with the hook-like member and the body to hold the hook-like member in selected position.

2. Structure as described in claim 1 in which said removable means comprises a removable locking element on the body between the center plates and the side of the body.

3. In a railway vehicle, a truck including a center plate having an outwardly extending

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flange, a body having a center plate rotatable on said truck center plate, and a substantially L-shaped member suspended vertically at one of its ends from said body on a horizontal pivot with its other end normally extending beneath said flange to limit relative vertical movement of said truck and said body, and an element secured to said body and engaging said member to hold the end of said member beneath said flange, said member swinging by gravity after removal of said element to a position to clear said flange and to provide for separation of said truck from said body.

4. In combination, railway vehicle body and truck structures including cooperating upper and lower center plates, a hook-like member having a pivot pin supporting it from the upper of said structures to swing in one direction on said pin in a vertical plane to underlie the lower structure to limit relative vertical movement of said structures by the resistance of said pin to shear, and to swing in the opposite direction on said pin and without detachment therefrom to a position to clear the lower structure to accommodate vertical separation of said structures, and a locking device in addition to said pin for securing the member in either position.

5. In combination, a railway vehicle truck and a vehicle body mounted thereon, said truck and body having cooperating center plates providing for pivoting of the truck and body, the truck having a body supporting bolster and wheeled axles including wheels at opposite sides of said center plates and aligned therewith transversely of the truck, hook-like members, each having the outer end of one of its legs pivoted to said body and the outer end of its other leg free to swing to a position beneath a portion of the truck bolster and to a position vertically clearing the truck bolster, said members being between said center plates and said wheels and accessible over said wheels from the sides of the vehicle, and movable means for holding said members in either said positions.

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