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RAILWAY BRAKE BEAM SUPPORT CHAIR STRUCTURE

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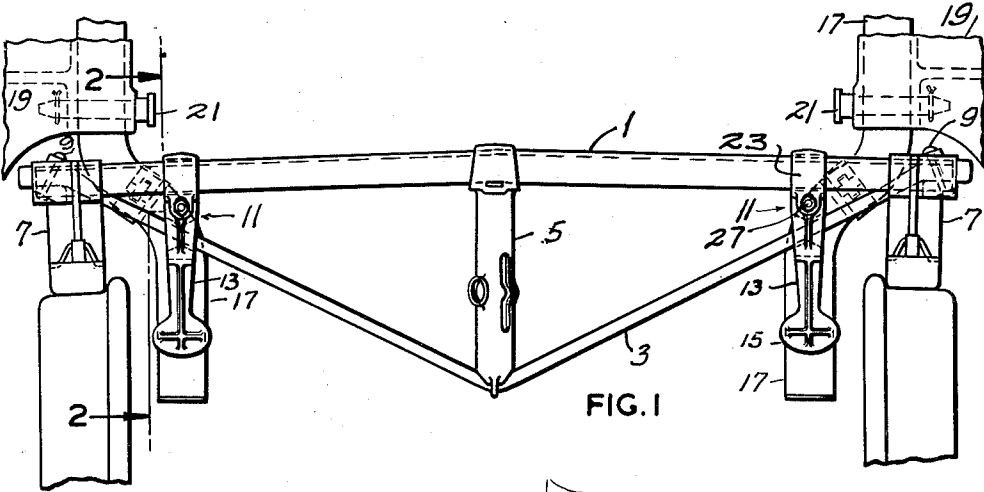


FIG. 1

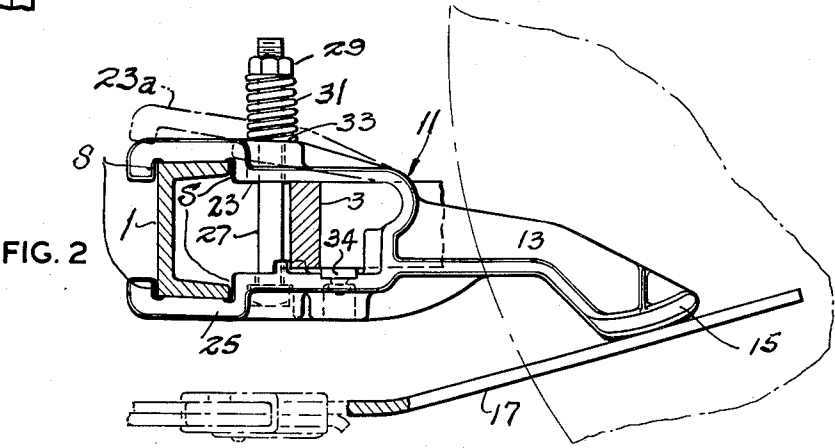


FIG. 2

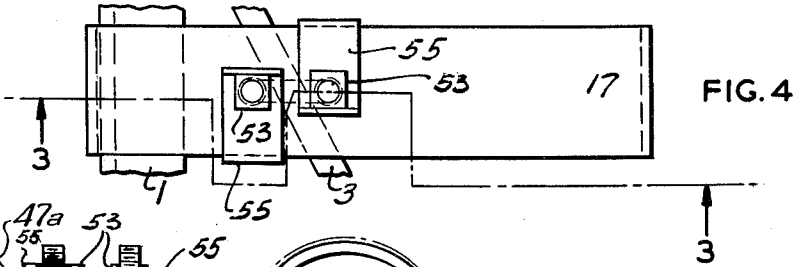


FIG. 4

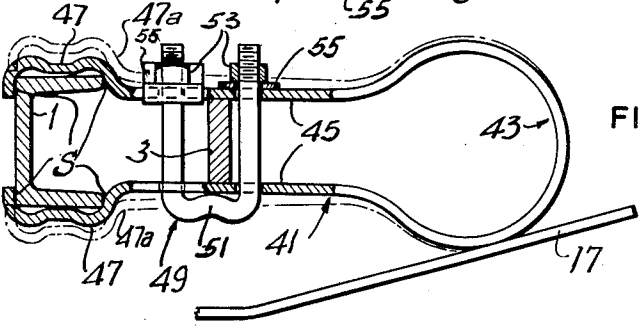


FIG. 3

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The invention relates to railway rolling stock brake beams and more particularly to the assembly therewith of a so-called "chair" which engages or is adapted to engage an auxiliary support carried by the truck main frame or bolster whereby the beam may be guided in its movement toward and from the wheels during application and release of the brakes, and will be held against dropping to the rail in the event of the failure of the swing hanger or other normal support for the beam.

It is a common practice to form such chairs of separate parts pivoted to each other and to utilize a bolt for drawing them together to clamp between them a beam main longitudinal member. The vibration to which such a clamp is subjected in the normal operation of a railway truck tends to loosen the holding device so that it may shift along the beam, to a point where it does not engage the cooperating support element on the truck, and thus renders the chair useless.

The main object of the present invention is to avoid the likelihood of a support chair of the type described being rendered ineffective and the invention is particularly adapted for embodiment in a chair of the type where both main longitudinal members of the beam are clamped between the chair arms.

In the accompanying drawings illustrating the invention:

FIGURE 1 is a plan view of a railway truss type brake beam with the chair of this application applied thereto near each end and also showing the support elements mounted on the truck side frames which underlie the chairs.

FIGURE 2 is a vertical transverse section on line 2—2 of FIGURE 1 and drawn to an enlarged scale.

FIGURE 3 is a corresponding section illustrating another form of the invention and taken on line 3—3 of FIGURE 4.

FIGURE 4 is a top view of the structure shown in FIGURE 3.

The brake beam shown in FIGURES 1 and 2 comprises a main longitudinal compression member 1 of channel section, a main longitudinal tension member 3 of rectangular bar section, there being a strut 5 spacing intermediate portions 1 and 3 from each other, said longitudinal members converging and meeting near their opposite ends, end members in the form of brake heads 7 receiving the end portions of the longitudinal members 1, 3 and riveted thereto by diagonal rivets 9 as detailed in Spaeth Patent 2,587,915. Each fourth point support chair 11 comprises a forward and downwardly facing arm 13 terminating in a shoe 15 having an arcuate lower face disposed to slide along an inclined supporting track 17 projecting inwardly from the truck side frame 19 to which it is secured by one or more pins 21. Vertically spaced jaws 23, 25 integral with the chair body and with each other extend in the opposite direction from arm 13 and are shaped to receive between them the beam compression and tension members 1, 3. Bolt 27 extends vertically through jaws 23, 25 intermediate the members 1, 3, and a nut 29 on the bolt serves to clamp the jaws tightly on beam elements 1, 3. Preferably a coil spring 31 is compressed between nut 29 and the opposing face 33 of jaw 23, and a rubber insert 34 forms a seat on arm 25 for bar 3.

Chair 11 is a one-piece structure formed of a malleable

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iron casting with its jaws having an initial relation as indicated by the broken lines 23a in FIGURE 2. Hence when the jaws are clamped about the beam main members there is a distortion of the resilient metal cooperating with coil spring 31 and rubber insert 34 to provide yielding pressure on the compression and tension members and thereby avoid loosening of the clamp and movement of the chair along the beam to a point where it would no longer overlie support 17.

FIGURES 3 and 4 illustrate another form of the invention in which the chair 41 is a one-piece forging formed of a single strap band intermediate its ends to form an arcuate portion 43 of approximately 180° and substantially parallel arms 45 extending therefrom and terminating in opposed bowed jaws 47 adapted to receive and clamp between them the beam main longitudinal members 1, 3. A U bolt 49 having a bowed cross arm 51 extends beneath and engages the lower arm 45, the upright legs of the U bolt extending along each side of tension member 3 and being threaded at their upper ends for clamping nuts 53. The initial shape of the chair is indicated by the broken lines 47a. Lock washers 55 and the inherent resiliency of arms 45 and of bowed elements 47, 51 function as do spring 31 and jaws 23, 25 of the form previously shown, to provide yielding pressure on the compression and tension members and thereby avoid loosening of the clamp and its movement lengthwise of the beam.

Each form of the invention includes a spring loading of the clamping nuts and a yielding thrust of the clamping jaws against the compression and tension members of the beam, and in each form of the invention the chair jaws are shouldered at S to abut the longitudinal members of the beam transversely of the length of the beam and resist play of the chair in a transverse direction.

The structures described attain the objects previously referred to and the details, while effective, may be varied without departing from the spirit of the invention and exclusive use of those modifications coming within the scope of the claims is contemplated.

What is claimed is:

1. A railway truss type brake beam and fourth point chair assembly comprising beam main compression and tension members converging toward each other at their ends, a one-piece chair structure near but spaced from the converging ends of said members and having a shoe at one end for slidably engaging a support member and having vertically spaced jaws at its other end movable endwise over said members near their convergence and toward each other to engage respectively upwardly and downwardly facing parts of both of said members, and an upright bolt extending through said jaws and positioned between said beam main members and including a head element at one end, having a seat on one of said jaws, and a nut element at the other end having a seat on the other of said jaws, one of said seats comprising a spring coiled about the bolt and compressed between one of said jaws and one of said elements.

2. A railway truss type brake beam and fourth point chair assembly comprising main beam compression and tension members converging toward each other at their ends, a one-piece chair near but spaced from the converging ends of said main members and comprising an elongated bar of spring material doubled on itself to form a compressible loop with an open end, constituting a pair of elongated jaws receiving said beam main members between them, and a closed end projecting below the level of said jaws and forming a shoe constructed and arranged for slidably engaging a support member, an upright bolt between the ends of said loop with means drawing said jaws together against the elasticity of the bar to clamp both of said members between said jaws.

3. A fourth point support chair structure for applica-

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tion to a railway truss type brake beam having a main compression member and a main tension member inclined thereto, said structure comprising a horizontally elongated body member terminating at one end in a downwardly facing shoe for slidably engaging a support bar, and terminating at its other end in upper and lower integral jaws spaced apart vertically and open horizontally to receive brake beam main compression and tension members between them, said jaws having downwardly and upwardly facing surfaces opposing each other, an upright bolt-like device extending through said jaws intermediate their ends and drawing them toward each other to clamp both of said beam main members between said faces, said arms and jaws consisting of a single strap doubled intermediate its ends to form an arc exceeding 180° with elongated substantially parallel legs extending laterally therefrom and substantially bisecting the arc and forming the chair jaws, the bolt-like device comprising a U-bolt with its cross arm bowed inwardly and the faces of the jaws opposing each other being bowed inwardly, the bowed portions of the U-bolt and jaws providing resilient clamping action when the chair is applied to a brake beam.

4. A fourth point support chair structure for application to a railway truss type brake beam having a main compression member and a main tension member inclined thereto, said structure comprising a horizontally elongated body member terminating at one end in a downwardly facing shoe for slidably engaging a support bar,

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and terminating at its other end in upper and lower integral jaws spaced apart vertically and open horizontally and having horizontally spaced pairs of upwardly and downwardly facing seats for receiving brake beam compression and tension members between the seats of each pair, an upright bolt-like device extending through said jaws intermediate said pairs of seats and drawing them toward each other and distorting them to yieldingly clamp both beam main members to said seats and said jaws including horizontally facing elements for engaging relatively inclined elements of the beam main members to restrict movement of the chair structure lengthwise of the beam members.

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