

[54] **RAILWAY BOGIE SPRING GROUP
SNUBBER ASSEMBLY**

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[51] Int. Cl. **B61f 5/06, B61f 5/12, F16f 9/32**

[58] Field of Search **105/197 D, 197 DB;
267/4**

[56] **References Cited**

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[57] **ABSTRACT**

A snubber assembly for railroad trucks and more particularly a snubber assembly interposed in the spring group intermediate a bolster end and side frame with the snubber assembly having improved means for retaining the snubber in a relative operating position and limiting the transverse and vertical movement thereof.

10 Claims, 4 Drawing Figures

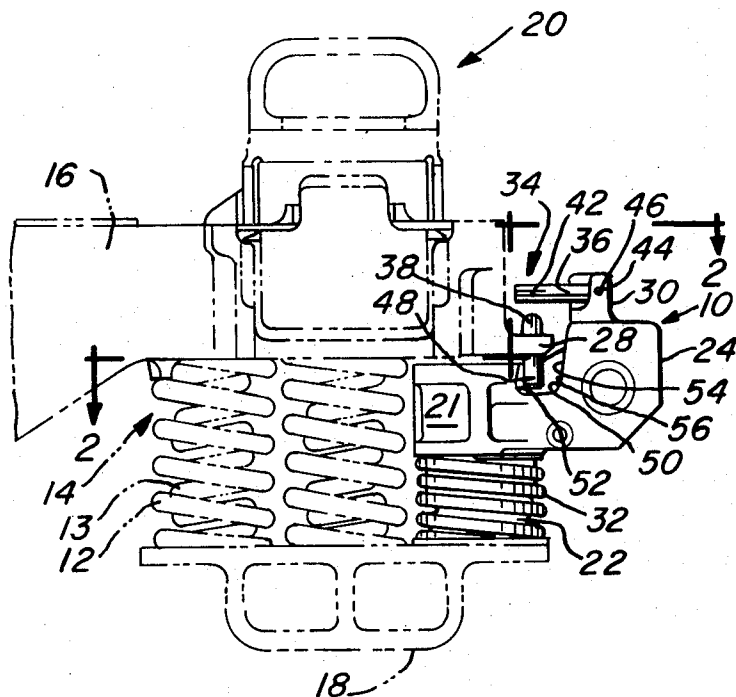


FIG. 1

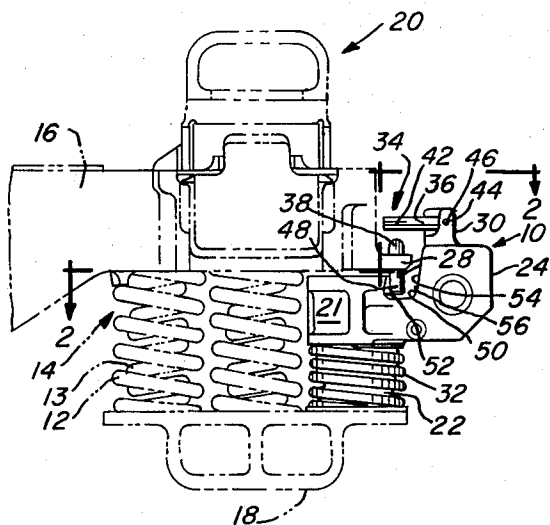


FIG. 2

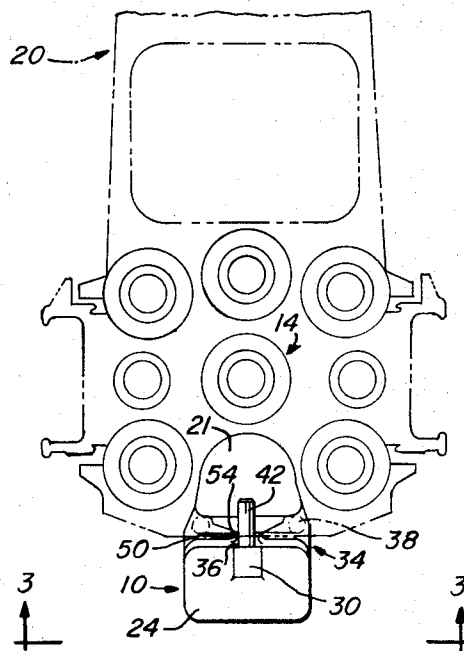


FIG. 3

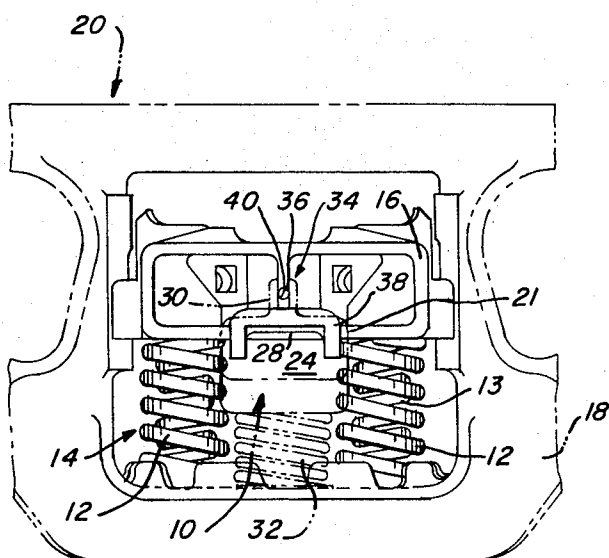
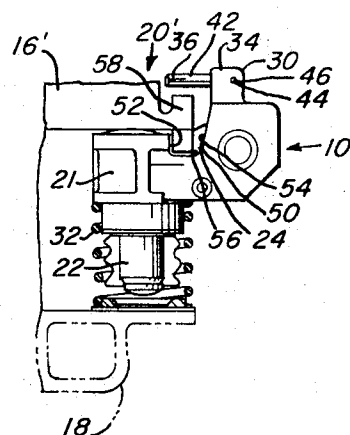


FIG. 4



RAILWAY BOGIE SPRING GROUP SNUBBER ASSEMBLY

Recent developments in the railway snubber art has resulted in snubbers being positioned in the spring group intermediate a bolster end and side frame. Such positioning results in increased snubber performance and operational efficiencies is fully illustrated in U. S. Pat. application Ser. No. 134,126 which is assigned to the same assignee as is this application.

Inasmuch as it is contemplated utilizing the snubbers of the type illustrated in the aforesaid copending application in installations on existing railway truck assemblies, means must be provided to retain the snubber assemblies in relative operating position within the compression spring group. Such means preferably would allow the insertion and retention of the snubber assemblies within the spring group with only minor modification to existing portions of a railway truck assembly.

By means of the present invention which includes independent means carried by the snubber and bolster which cooperate to maintain a snubber positioned in the compression spring group within a limited range of relative vertical and transverse movement the hereinabove mentioned object of snubber retention is achieved with only minor modification of existing portions of a railway truck assembly. Furthermore, portions of the particular retention structure disclosed herein can quite readily be formed as an integral portion of a truck bolster.

These and other objects and advantages of the present invention will become more readily apparent upon a reading of the following description and drawings in which:

FIG. 1 is a partial side elevational view of a railway truck assembly illustrating a portion of the truck bolster and side frame and including a snubber assembly of the present invention retained within the compression spring group thereof;

FIG. 2 is a plan view of a portion of a railway truck assembly and viewed on line 2—2 of FIG. 1;

FIG. 3 is a side view of a portion of a railway truck assembly viewed on lines 3—3 of FIG. 2 and with a portion of the snubber assembly shown in phantom; and

FIG. 4 is an elevational view similar to FIG. 1 and showing another embodiment of the snubber assembly of the present invention.

Referring to the FIGS. 1—3 there is illustrated therein a snubber assembly constructed according to the present invention including a reservoir type snubber 10 of a type designed to replace one of the springs 12 of a standard compression spring group 14. Spring group 14 is interposed between a standard bolster 16 and standard side frame 18 in the truck of a railway freight car generally indicated at 20.

Spring group snubbers such as snubber 10 possess the advantage of being operationally insertable in a standard side frame and bolster with a minimum of reconstruction thus achieving the advantages of the particular snubber location and construction without the expense of designing and building special bolsters and side frames with the attendant costs of special parts to be stocked and accounted for.

Snubber 10 comprises: a main casing portion 21 having a piston rod member 22 reciprocally received therein; and a hydraulic fluid reservoir portion 24 which depends laterally outwardly from portion 21 generally in a direction parallel to the longitudinal ex-

tent of bolster 16. As best seen in FIGS. 1 and 4 when snubber 10 is in the retained position thereof within a spring group 14, reservoir portion 24 is generally longitudinally spaced from an adjacent axial end portion of bolster 16. Each bolster end portion includes a lower outwardly extending flange section 28 at the outermost ends of bolster 16. Snubber 10 additionally includes an upwardly extending retaining lug portion 30 which as shown extends upwardly from reservoir portion 24 adjacent the inner end thereof. As used herein inner and outer shall refer respectively to the left and right of the truck 20 as viewed in FIGS. 1 and 4.

The snubber 10 replaces any one of three outside springs 12 of the compression spring group 14 along with one of the inner springs 13 which are shown as being coaxial and cooperating with the outer springs 12 in a manner well known in the art. A body support spring 32 surrounds a lower section of main casing portion 21 and is interposed between an intermediate annular shoulder of the portion 21 and the upper surface of a lower portion of the side frame 18. The body support spring 32 supports the snubber 10 in all normal relative operating positions of the bolster 16 and side frame 18.

The internal structural features and operation of snubber 10 are well known in the art, for example as fully illustrated and described in the hereinbefore mentioned copending U.S. Pat. application Ser. No. 134,126. Accordingly, inasmuch as the invention herein resides primarily in the inclusion of improved means for retaining the snubber 10 within the spring group 14 of the railway truck 20, reference is hereby made to such U.S. Pat. application Ser. No. 134,126 for a detailed description and showing of the structural features and operation of a snubber such as snubber 10.

Inasmuch as snubbers such as snubbers 10 are contemplated being utilized in retrofit on existing railway truck assemblies snubber retention means 34 of the present invention are provided which allow the insertion and retention of the snubber assemblies within the spring group with only minor modification to existing portions of a railway truck assembly. Snubber retention means 34 includes a vertical retaining portion 36 carried by the snubber 10 and a transverse retaining portion 38 carried by the bolster 16.

Vertical retaining portion 36 includes the retaining lug portion 30 described hereinbefore as depending upwardly from reservoir portion 24 adjacent the inner end thereof. A transverse bore 40 extends through portion 30 and accepts therein a pin 42. Pin 42 is retained within bore 40 by means of a retaining pin 44 which is insertable within a transverse bore 46 in lug portion 30 which extends generally perpendicular to bore 40. When pin 42 is in operating position a transverse bore therein (not shown) is aligned with bore 46 and the retaining pin 44 is insertable through the aligned bores for the retention of pin 42.

Pin 42 extends inwardly from bore 40 and when snubber 10 is in the operating position thereof the innermost end of pin 42 is spaced inwardly from the outermost end of flange 28 and pin 42 is also spaced upwardly from flange 28. With such a construction and positioning of pin 42 as discussed hereinabove it becomes readily apparent that the snubber 10 will be retained within a limited vertical movement.

Transverse retaining portion 38 includes a generally downwardly open U-shaped member 48 which is car-

ried by bolster 16 and cooperates with snubber 10 to limit the transverse movement of snubber 10 within predetermined limits. In retrofit member 48 is positioned by burning or drilling openings in flange 28 and thereafter inserting the legs of member 48 downwardly through the openings such that the free ends of member 48 are spaced downwardly from flange 28. Subsequent to the positioning of member 48 within the flange openings, member 48 can be fixedly secured to flange 28 such as by welding or the like. Snubber 10 includes a saddle portion 5 which cooperates with member 48 for the transverse retention of snubber 10. Saddle portion 50 includes an inner and outer wall 52 and 54 respectively and a web 56 extending between walls 52 and 45.

As illustrated in FIG. 1 when member 48 is in the position described hereinabove the legs of member 48 are spaced on opposite sides of web 56 such that movement of snubber 10 transversely of bolster 16 is restrained by web 56 and movement of snubber 10 along the longitudinal extent of bolster 16 is restrained by inner and outer walls 52 and 54. Pin 42 and flange 28 cooperated to prevent the disengagement of the legs of member 48 and consequent circumvention of the usual function thereof as transverse retention means by unusual circumstances which could possibly cause spring 32 to be unable to support the snubber as described hereinbefore.

FIG. 4 illustrates another embodiment of the present invention quite similar to the embodiment illustrated in FIGS. 1-3 and described hereinbefore with the primary distinction therebetween being that the bolster 16' thereof includes a U-shaped flange portion 58 which is operationally similar to transverse retaining portion 38 discussed hereinbefore. Thus, with the embodiment illustrated in FIG. 4, no field alterations need be done to retrofit a snubber 10 however the embodiment does require a bolster which is cast or machined with the particular flange portion 58.

It is to be noted that the invention herein resides in the means for retaining a snubber within a spring group intermediate a side frame and truck and accordingly modifications can be made to the embodiments described hereinbefore without departing from the scope of the invention herein, for example: configurations other than a U-shaped member can be utilized for the transverse snubber restraining; outwardly extending lugs can be provided on the side exterior surfaces of snubber 10 and the transverse retaining portion can be proportioned such that the transverse retaining of the snubber can be by limited engagement of the retaining portion with the lugs rather than a snubber saddle portion; pin retaining means other than a cotter pin can be provided if desired; threaded bolt means can be provided rather than the U-shaped member; and the like.

What is claimed is:

1. In a railway truck assembly in which a snubber

member having a pair of elongated sections telescopically movable with respect to each other along a longitudinal axis thereof is interposed in the spring group intermediate a bolster member and a side frame member, the improvement comprising: axially opposed areas of said sections being engagable with respective areas of said bolster and side frame members adjacent thereto; snubber retaining means located transversely of said areas and having portions thereof carried by said snubber member and one of said other members to loosely and captively retain said snubber member within a predetermined operating position.

2. In a railway truck assembly as specified in claim 1 wherein said portions of said snubber retaining means are carried by said snubber member and said bolster member.

3. In a railway truck assembly as specified in claim 2 wherein the one of said portions carried by said bolster member is cooperable with said snubber member to maintain the transverse movement of said snubber member with respect to said bolster member within predetermined limits.

4. In a railway truck assembly as specified in claim 3 wherein the one of said portions carried by said snubber member is cooperable with said bolster member to maintain the vertical movement of said snubber with respect to said bolster within predetermined limits.

5. In a railway truck assembly as specified in claim 3 wherein said snubber member includes a saddle section located transversely of said areas and said one of said portions is cooperable with said saddle section to maintain said transverse movement.

6. In a railway truck assembly as specified in claim 2 wherein the one of said portions carried by said bolster member is fixedly secured thereto.

7. In a railway truck assembly as specified in claim 2 wherein said bolster member includes a flange section located transversely of said areas and adjacent the lower end of said bolster member and said one of said portions is carried by said flange section.

8. In a railway truck assembly as specified in claim 7 wherein the one of said portions carried by said snubber member includes a retaining member which extends transversely inwardly from an outermost portion of said snubber member and has the innermost end thereof located transversely of said areas and overlying at least a portion of said flange section.

9. In a railway truck assembly as specified in claim 1 wherein the one of said portions carried by said snubber member is cooperable with said bolster member to maintain the vertical movement of said snubber with respect to said bolster within predetermined limits.

10. In a railway truck assembly as specified in claim 1 wherein said snubber member is interposed in an outer spring within said spring group.

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