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Neumann

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[54] **SNUBBED BOLSTER**

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[52] **U.S. Cl.**..... **105/197 DB,** 105/202, 105/206 R, 105/226

[51] **Int. Cl.** **B61f 5/06,** B61f 5/12, F16f 1/06

[58] **Field of Search** ..... 105/197 DB, 202, 206 R, 105/226

[56] **References Cited**

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[57] **ABSTRACT**

In a railway truck wherein friction shoes are operatively carried in wedge-shaped pockets of the bolster and are urged upwardly and outwardly by one or more control springs positioned between the bottom of the friction shoes and the tension member of the truck side frame, the invention provides for a bolster wherein the outer portion of an inclined bolster wall that extends above the plane of the bolster top wall is connected to the top wall by an integrally cast hood. Such an arrangement thereby encloses the entire bolster pocket except at the bottom of each pocket and the side of the pockets adjacent the vertical columns of the side frame. This improved construction greatly increases the strength of that portion of the inclined wall that extends to the vertical bolster side wall and above the bolster top wall.

2 Claims, 3 Drawing Figures

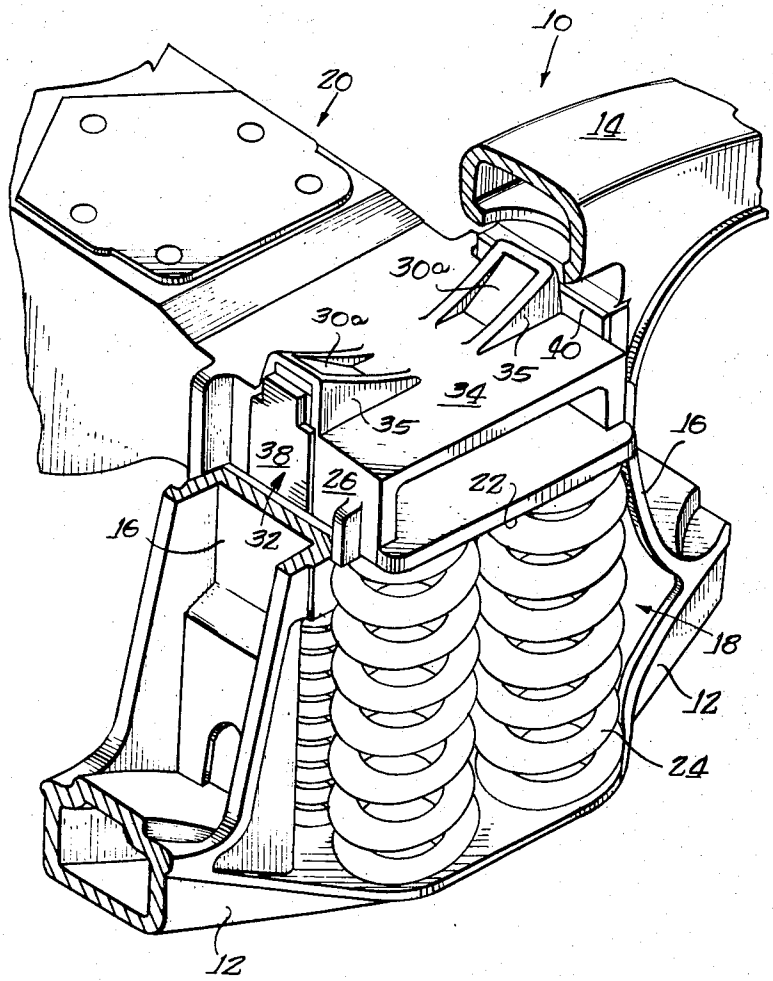
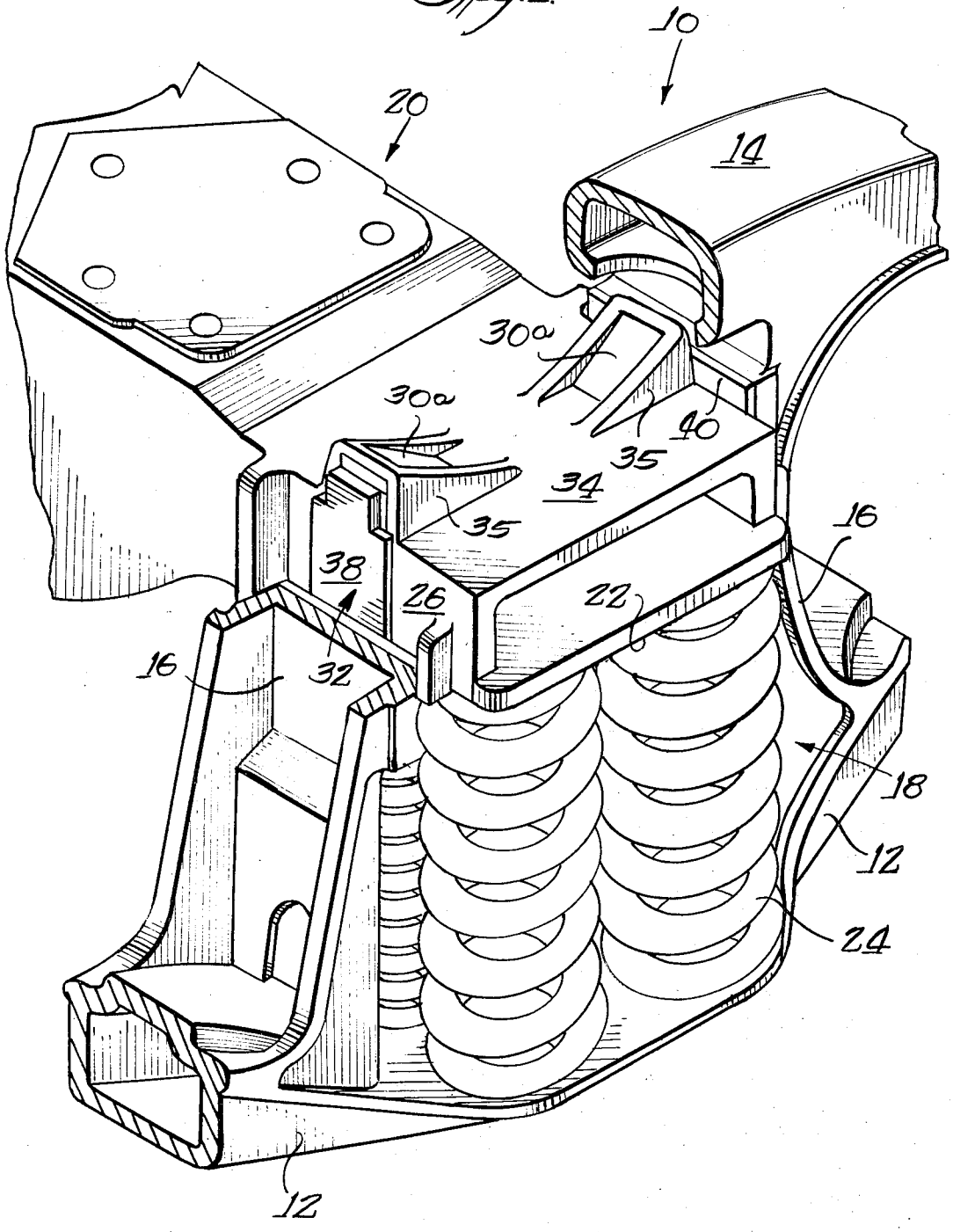
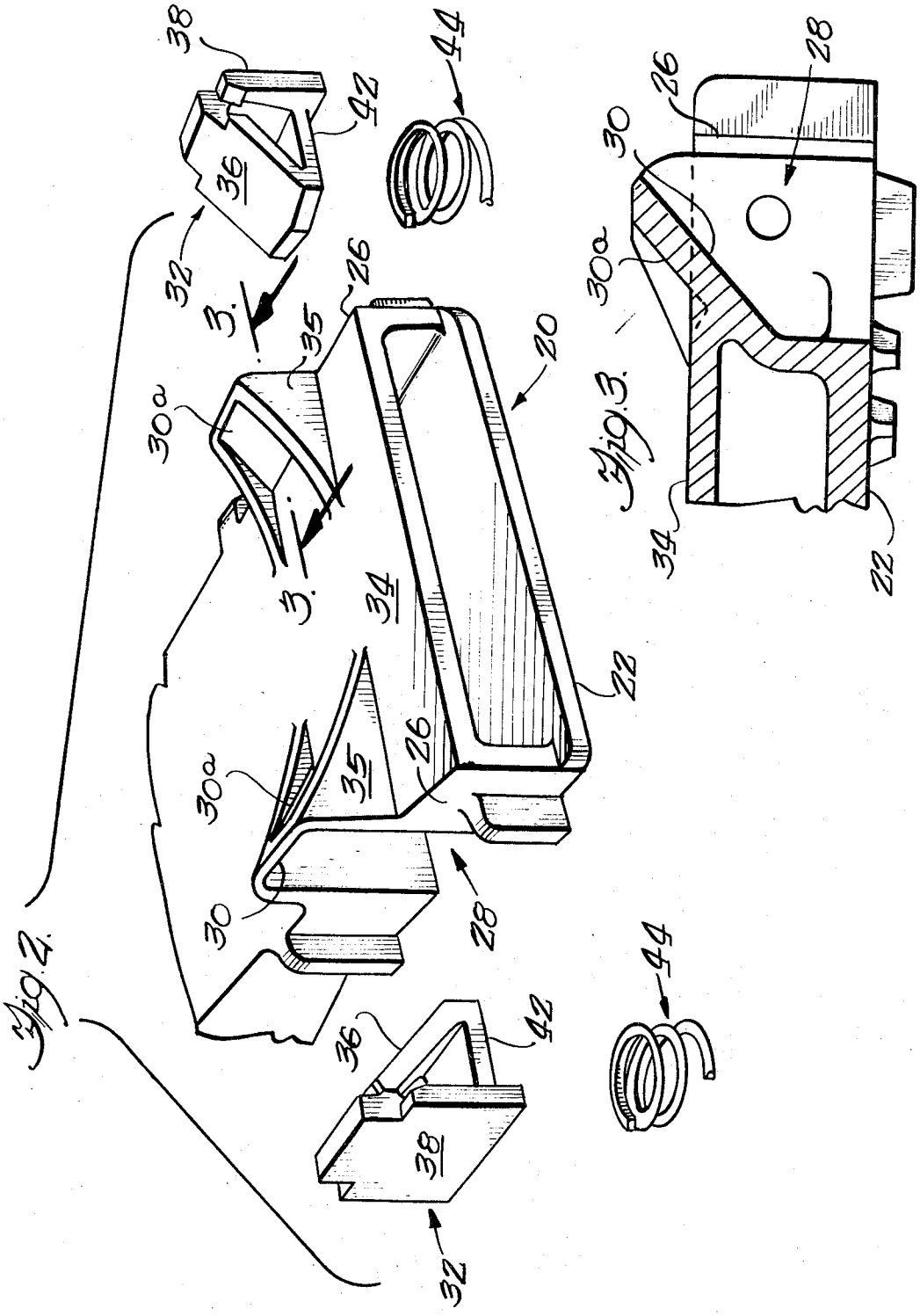


Fig. 1.




38
42
44
36
32
3
3
26
35
20
30a
34
22
28
30
Fig. 2.
Fig. 3.

SNUBBED BOLSTER

This invention relates to railway vehicles and more particularly to improvements in cast steel truck bolsters for such vehicles.

With the advent of larger railway vehicles and heavier loading of existing equipment, the need has arisen to structurally improve certain parts of the car truck that are subject to high stresses during actual service conditions.

One area requiring such structural improvement is the truck bolster specifically in the area on either side of the bolster where the friction shoes are positioned; as it was common in prior art arrangements for cracks to form after prolonged service in the top wall of the bolster around the inclined bolster wall that extends upwardly through the bolster top wall.

Briefly, the present invention contemplates the provision of a freight car truck comprising spaced side frames supported at their ends upon wheel and axle assemblies and interconnected by a bolster which is resiliently supported at its ends upon the side frames. The bolster is provided with shoe pockets to receive friction shoes which are urged into frictional engagement against side frame columns by compression springs to snub movements of the bolster relative to the side frames. The improved hooded construction of the bolster top wall and inclined walls prevents the cracking of the extensions of the inclined walls that was common in prior art arrangements.

The foregoing and other objects and advantages of the invention will become apparent from the following specification and the accompanying drawings, wherein:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a fragmentary perspective view of a railway truck side frame and bolster embodying a preferred form of the invention, the view being taken from the outboard side of the side frame. Portions of the side frame and bolster are broken away for clarity.

FIG. **2** is an exploded perspective view of the truck bolster friction shoes and control springs showing more clearly the improved construction.

FIG. **3** is a fragmentary sectional view through the bolster structure shown in FIG. **2**, the section being taken in the vertical plane indicated by line **3—3.**

Referring first to FIG. **1** which illustrates a portion of a truss type railway truck, the side frame indicated generally at **10** is seen to comprise a tension member **12** and a compression member **14** interconnected by spaced vertical columns **16,** the sides of which form a window **18** (FIG. **1**) substantially rectangular in shape. The side frame **10** is supported in the usual manner by wheel and axle assemblies which are not shown in the drawings.

It should be understood that the railway truck for the purpose of the present disclosure may be considered identical at both sides thereof and for the sake of brevity only that portion shown will be described in detail.

The window **18** is adapted to receive the end of the bolster, generally indicated at **20.** The lower surface **22** at the end of the bolster **20** is supported by a plurality of support spring groups **24** which rest at their lower ends on the side frame tension member **12.** In opposite side walls **26** at each end of the bolster **20** are wedge-

shaped receiving pockets **28** which open outwardly toward the side frame columns **16** and have an inclined inner wall or sloped surface **30** which has a width corresponding substantially to the width of the wedge-shaped friction shoe **32** positioned therein.

The inclined inner wall **30** projects above the plane of the bolster top wall **34.** That outer portion of the sloped surface **30***a* that extends above the top wall of the bolster **34** is connected to the top wall of the bolster **34** by an integrally cast hood **35.** Such an arrangement encloses the entire bolster pocket **28** except at the bottom and the side adjacent the vertical column **16.** This improved construction increases the strength of that portion of the inclined wall **30** that extends above the top wall **34** of the bolster **20.**

One wedge-shaped friction shoe **32** is operatively carried in each pocket **28** and defines an inclined surface **36** corresponding to and frictionally engaging the inclined wall or sloped surface **30** of the pocket **28.** Shoe **32** also defines a vertical surface **38** for frictionally engaging a wear plate **40** on the adjacent side frame column **16.** The lower surface **42** of the wedge-shaped friction shoe **32** is engaged by the upper end of a control spring **44** which is disposed between said friction shoe **32** and the tension member **12** of the side frame **10.** The inclined inner wall **30** therefore provides an inclined thrust area equal to that of the engaged portion of the inclined surface **36** of the wedge-shaped friction shoe **32.**

The improved construction of the bolster **20** greatly increases the strength of the inclined or sloped surface **30** in the bolster pocket **28,** thereby eliminating the failures that were prevalent in prior art arrangements, as it was common for cracks to form at the intersection of the bolster top wall **34** and that portion of the inclined surface **30***a* that extends above the top wall **34** of the bolster **20.** In the event the car remained in service, the upper portion of the inclined surface **30***a* would eventually break off, thereby allowing the friction shoe **32** to rise drastically or in some cases come out of the pocket entirely. In either case effective snubbing of the bolster is severely hampered which may result in the bolster oscillations increasing to such a magnitude that the support springs **24** would be driven to solid, ultimately resulting in their damage.

In an effort to overcome the aforementioned problem, many arrangements were tried; most attempting to solve the problem, tried to increase the amount of metal at the intersection of the inclined surface and the top wall of the bolster; the problem, however, persisted.

The solution to the above-mentioned problem being the new and novel arrangement disclosed herein. In arriving at this solution it was determined that the phenomenon of cracking resulted from the abrading action that the friction shoe had on the side walls just above the top wall of the bolster; specifically at the two areas located on either side of the inclined surfaces **30** and **30**a where said surface joins the top wall of the bolster.

As a result of friction shoe **32** movement in the bolster pocket **28,** an abrading action occurs on the inclined or sloped surface of the bolster. As a result of this abrading action, it was found that the edges on the sloped surface (not shown), at the place of intersection with the top wall **34** of the bolster **20,** become worn to a very thin edge. This resulting wear pattern eventually

creates a condition of concentrated stress, the result of which causes the formation of cracks in the top wall of the bolster which extend from the intersection of the top wall of the bolster and the sloped surfaces **30** and **30***a* in the pocket **28.** As previously mentioned, continued service ultimately results in the breaking away of the sloped surface from the bolster.

Use of the hooded arrangement hereinbefore described, prevents the undesirable build-up of stress that was common in prior art arrangements since the friction shoe can no longer wear through the top wall of the bolster at the point where the inclined surface intersects the top wall **34** of the bolster **20.**

The terms and expressions which have been employed are used as terms of description and not of limitation, and there is no intention, in the use of such terms and expressions, of excluding any equivalents of the features shown and described or portions thereof, but recognize that various modifications are possible within the scope of the invention claimed.

For example, I am aware that the hooded portion over each pocket **28** could be extended across the top **34** of the bolster **20** to join the hooded portion on the opposite side of the bolster and thereby transversing the entire width of the bolster **20.** Such an arrangement would greatly increase the strength of the inclined or sloped surface **30***a* that extends above the top wall **34** of the bolster **20.**

I claim:

1. In a railway car truck bolster; the combination of top and bottom walls, spaced side walls interconnecting said top and bottom walls, said spaced side walls defining inboard and outboard sides of a friction shoe pocket, an opening in the bottom wall affording access to said pocket by an associated shoe-actuating spring, a sloping wedge wall having inboard and outboard edges, said wedge wall being integral with said side walls and integral with and extending above said top wall to afford a downwardly facing wedge surface for an associated shoe in said pocket, and a hood integral with said inboard and outboard edges of said wedge wall and with said top wall along said edges, the outer edge of said hood being substantially coplanar with said side walls along their outer surfaces and defining therewith the outer extremity of said pocket.

2. A railway car truck bolster according to claim **1** wherein each side of the hood above the top wall is substantially triangular as seen in the end elevational view of the bolster.

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