March 3, 1936. A. F. LEPPLA 2,032,996

RAILWAY CAR TRUCK

Filed Dec. 7, 1933 4 Sheets-Sheet 1

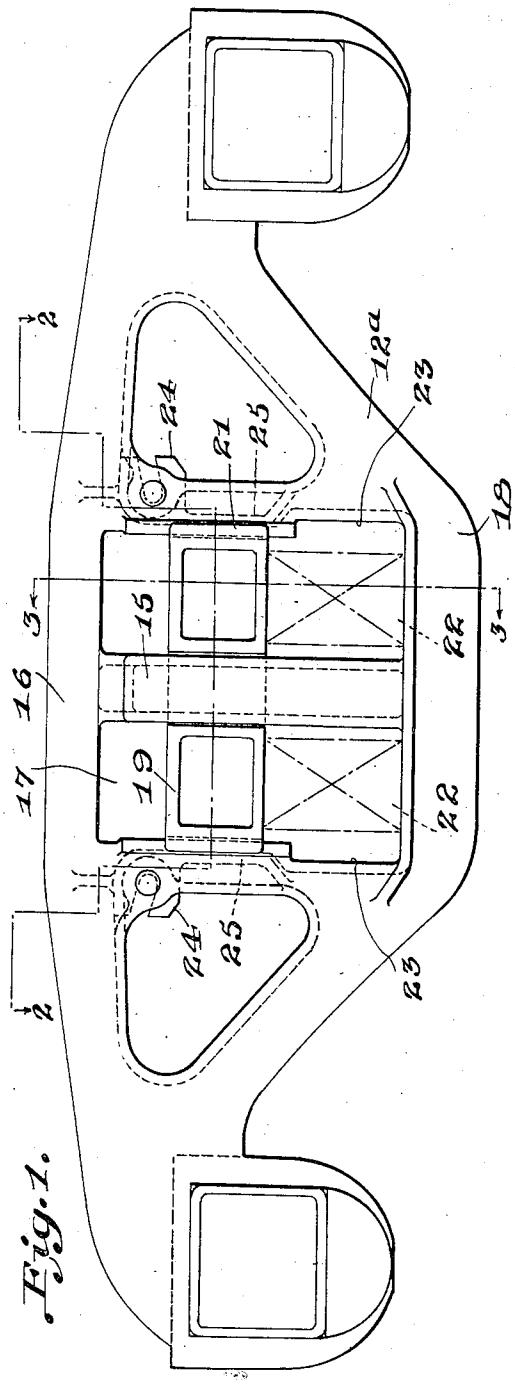


Fig. 1.

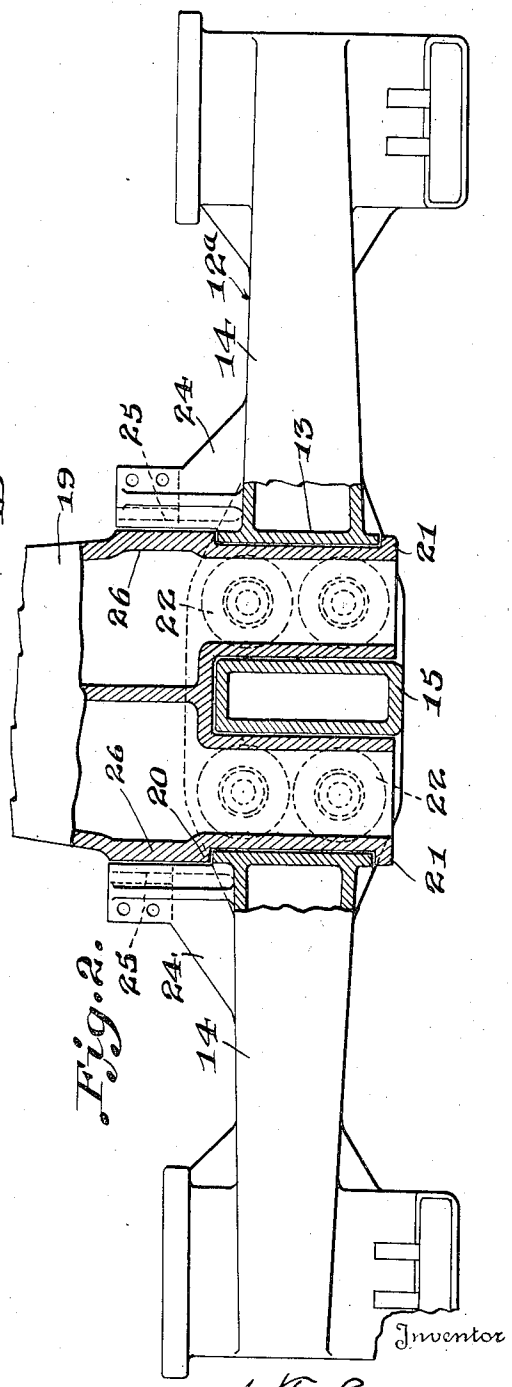


Fig. 2.

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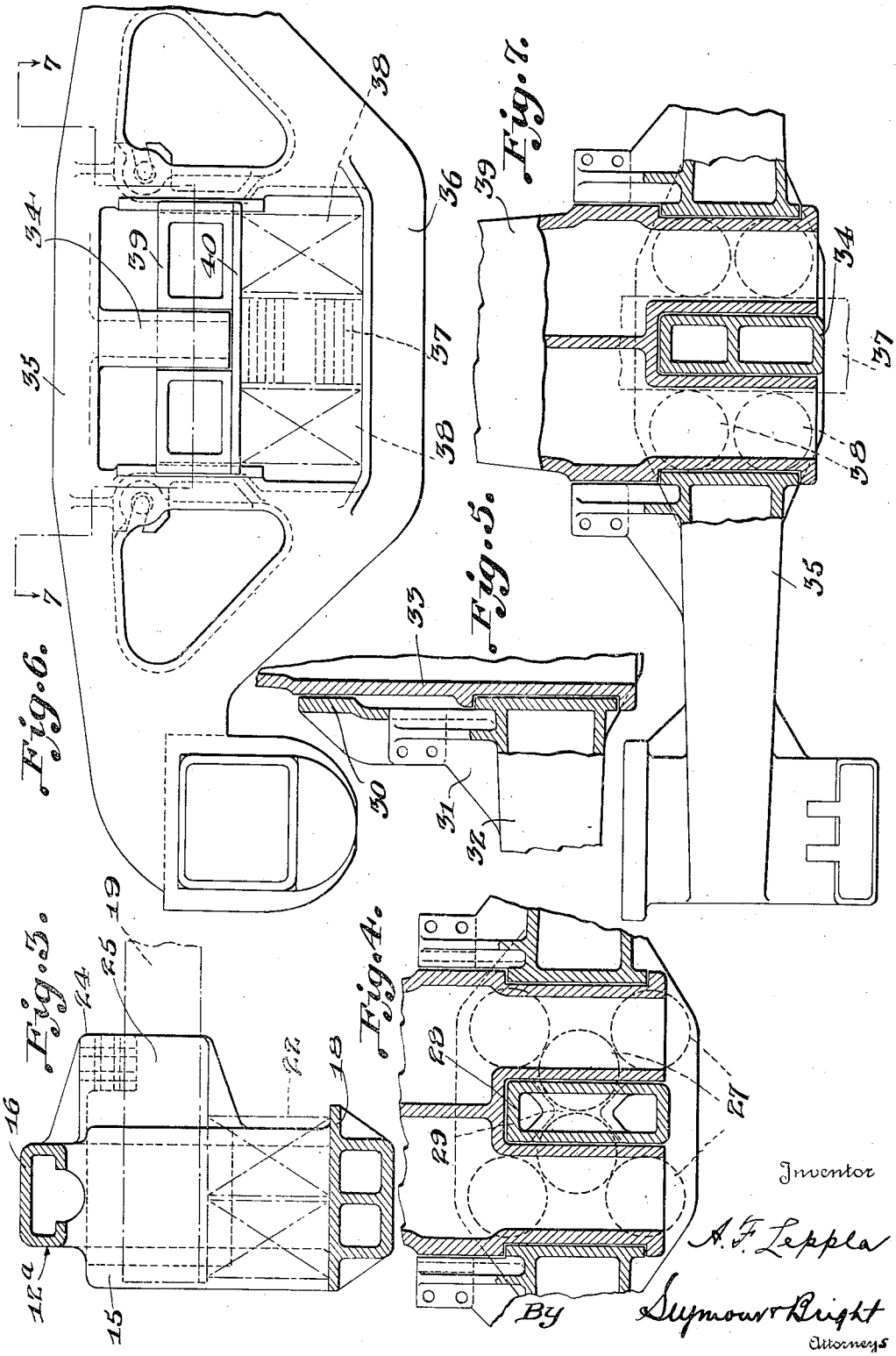
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RAILWAY CAR TRUCK

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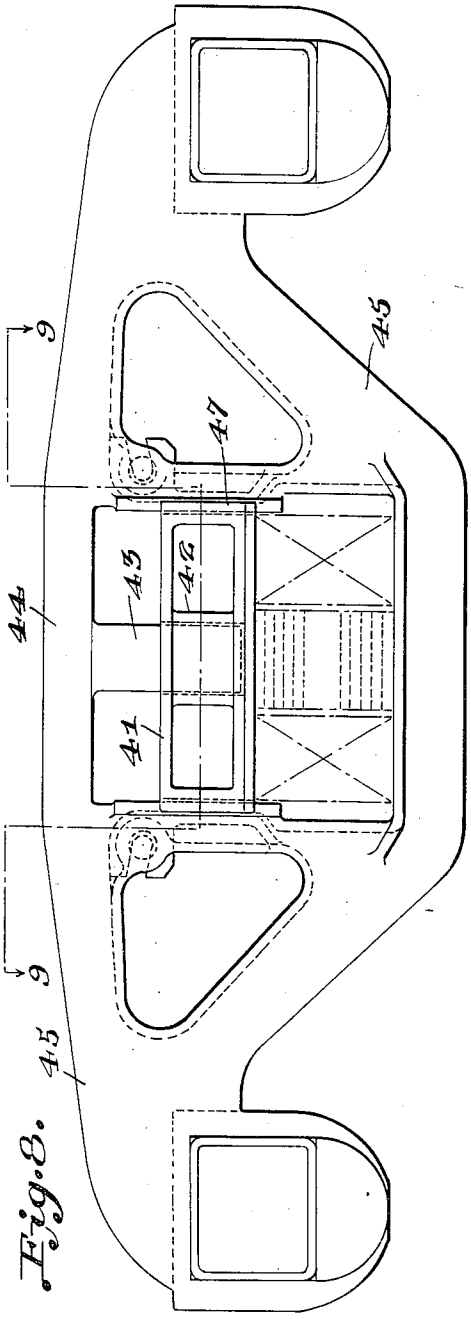


Fig. 8.

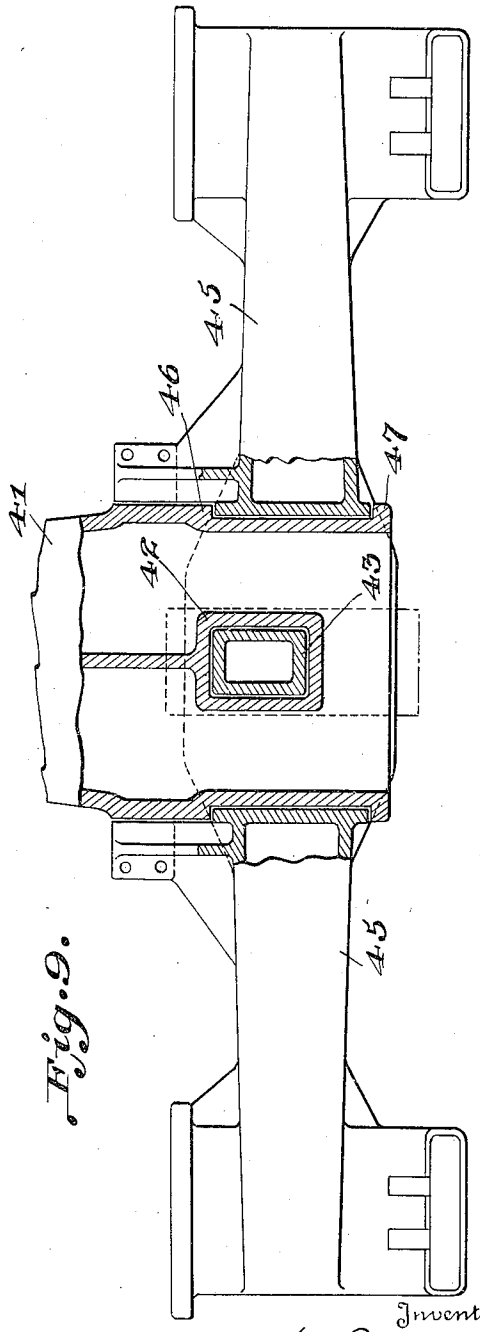


Fig. 9.

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RAILWAY CAR TRUCK

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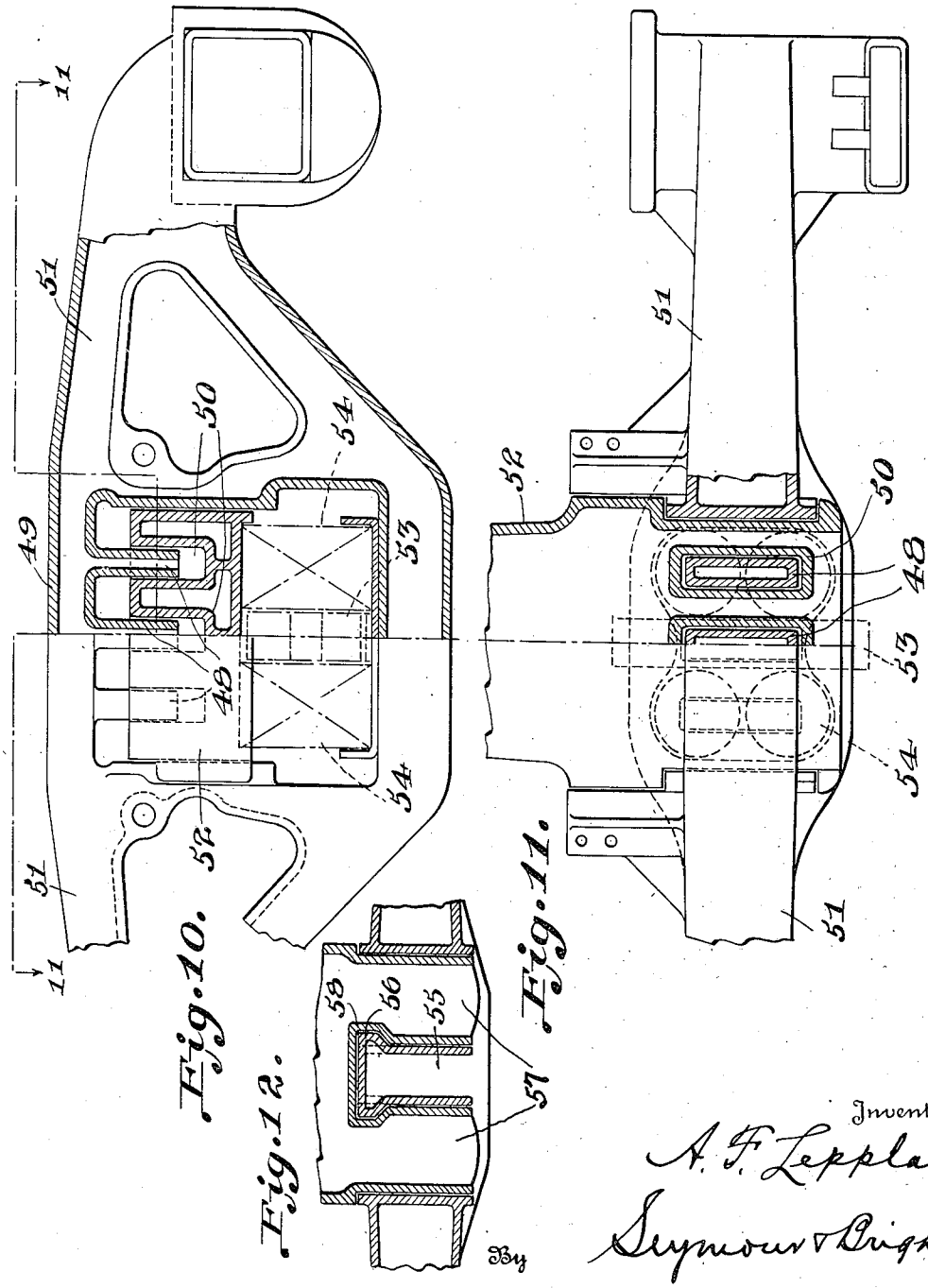


Fig. 10.

Fig. 11.

Fig. 12.

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2,032,996

RAILWAY CAR TRUCK

Albert F. Leppla, Rock Island, Ill.

Application December 7, 1933, Serial No. 701,368

6 Claims. (Cl. 105—197)

This invention relates to improvements in railway car trucks and more especially to improved means for maintaining a "square" truck while dispensing with the usual spring plank.

An object of the invention is to strengthen the truck side frames while at the same time providing a large area of contact between the side frames and bolster, whereby the life of the side frames and bolster is increased by the increased wearing area. By virtue of the large area of contact between the side frames and bolster, particularly along the lengthwise sides of the bolster, a condition is obtained in which the center lines of the side frames are kept perpendicular to the center line of the bolster.

With the foregoing objects outlined and with other objects in view which will appear as the description proceeds, the invention consists in the novel features hereinafter described in detail, illustrated in the accompanying drawings and more particularly pointed out in the appended claims.

In the drawings:

Fig. 1 is a side elevation of a car truck side frame and bolster assembly made in accordance with my invention.

Fig. 2 is a top plan view partly in section, the section being taken along the line 2—2 of Fig. 1.

Fig. 3 is a vertical sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a view similar to the center portion of Fig. 2 but showing an arrangement to permit the use of six springs instead of four.

Fig. 5 is a sectional view, partly in elevation of a detail of another modification.

Fig. 6 is a view similar to Fig. 1 but showing an embodiment in which a leaf spring is used in combination with coil springs for supporting the bolster.

Fig. 7 is a top plan view of the same partly in section, the section being taken along the line 7—7 of Fig. 6.

Fig. 8 is a side elevation of a side frame and bolster assembly and illustrating another modification.

Fig. 9 is a plan view of the structure shown in Fig. 8, partly in section, said section being taken on the line 9—9 of Fig. 8.

Fig. 10 is a side elevation partly in vertical section, of still another modification.

Fig. 11 is a top plan view partly in horizontal section of the structure shown in Fig. 10, said section being taken on the line 11—11 of Fig. 10.

Fig. 12 is a view similar to Fig. 4 of another form of the invention.

Referring to the embodiment of the invention illustrated in Figs. 1 to 3 inclusive, 12*a* designates a car truck side frame having vertical columns 13 which are wider than the triangular portions 14 in order to provide increased contact surface. This side frame also differs from conventional side frames in that a vertical post or tie 15 connects the compression portion 16 at the top of the bolster opening 17 to the spring seat portion 18 at the bottom of said opening.

The bolster 19 in this instance has fork-shaped ends and an end of the bolster straddles the post 15 as shown in Fig. 2.

Inner lugs 20 and outer lugs 21 are provided at the opposite sides of the bolster and the surfaces of the bolster between these lugs engage the inner surfaces of the columns 13. Of course, the lugs limit lateral movement of the bolster relative to the side frame while the bolster is supported by coil springs 22, but the lower portions of the columns are notched at 23 to provide clearance for the outer lugs 21 when the springs are removed and the bolster is lowered for withdrawal.

The brake hanger brackets 24 in accordance with the invention are extended inwardly and provided with vertical transverse webs 25 which bear against bearing surfaces 26 arranged inwardly of the inner lugs 20 at opposite sides of the bolster.

The advantages of the above construction are:

(*a*) The side frame is strengthened by the use of the vertical post 15. A large area of contact between the side frame and bolster is obtained and the life of the side frame and bolster is thereby increased by the increased wearing area.

(*b*) By virtue of the large area of contact between the side frame and bolster, lengthwise of the sides of the bolster, a condition is obtained in which the center line of the side frame is kept perpendicular to the center line of the bolster. This condition maintains a "square" truck and allows the usual spring plank to be dispensed with.

Four springs are employed to support the bolster in the structure shown in Figs. 1 to 3 inclusive, but where six springs 27 are to be employed, as shown in Fig. 4, the opposite sides of the lower portion of the post 28 may be shaped to provide an opening 29 to partially receive the medial springs.

In Fig. 5, the bolster engaging surface 30 is made as an extension of the brake hanger bracket 31 and has the advantage of increasing the length of contact between the side frame 32 and bolster 33, and thereby increasing the rigidity with which the truck is held in square.

Where it is desired to support the bolster by leaf springs as well as by coil springs, the post **34**, as shown in Figs. 6 and 7, need not extend from top to bottom of the bolster opening, but it can simply depend from the compression portion **35** of the side frame to a point positioned above the spring seat portion **36** of the frame. Then a leaf spring **37** and coil springs **38** may be employed to support the bolster **39** and spring cap **40**.

Instead of making the ends of the bolster of fork-shape, I can, as shown in Figs. 8 and 9, provide each end of the bolster **41** with a vertical port **42** which will more or less snugly engage a post **43** which is integral with and depends from the compression portion **44** of the side frame **45**. With a structure of this kind, the inner and outer lugs **46** and **47** of the bolster could be dispensed with, although I prefer to employ them.

In Figs. 10 and 11, I have illustrated a construction in which a plurality of pins **48** depend from the compression portion **49** of the side frame and cooperate with sockets **50** formed in the bolster. This construction has the advantage of increasing the wearing area between the side frame **51** and bolster **52** and aids in maintaining a "square" truck. The modification also permits a leaf spring **53** at the center of the spring group as well as coil springs **54**.

In the form of the invention shown in Fig. 12, the outer bolster lugs are dispensed with and the upper portion of the post **55** is substantially of T-shape in horizontal section, as shown at **56**, and the forked end **57** of the bolster is correspondingly shaped as shown at **58**, so as to limit the lateral movement of the bolster after it has been attached to the post.

While I have disclosed what I now consider to be some preferred embodiments of the invention in such manner that the same may be readily understood by those skilled in the art, I am aware that changes may be made in the details disclosed without departing from the spirit of the invention as expressed in the claims.

What I claim and desire to secure by Letters Patent is:

1. In a car truck, a side frame having columns at opposite sides of a bolster opening, a post rigidly united with the side frame and arranged in the bolster opening, a portion of said post being substantially T-shaped, and a bolster extending into the bolster opening and shaped to engage the T-section portion of the post and said columns, so as to form a positive lock between the bolster and the side frame.

2. In a car truck, a side frame having columns at opposite sides of a bolster opening, a substantially T-shaped post rigidly united with the side frame and arranged in said bolster opening, a bolster extending into the bolster opening and shaped to engage said post and said columns, said T-shaped post depending from top portion of the side frame and forming a positive lock between bolster and side frame, and springs in the bolster opening supporting the bolster.

3. In a railway car truck, a side frame having a bolster opening and columns arranged at opposite sides thereof, a vertically disposed substantial T-shaped post integral with the side frame and arranged in said opening between said columns, and a bolster having its ends shaped to contact with the columns and post over relatively large bearing areas.

4. In a railway car truck, a side frame having a bolster opening and columns arranged at opposite sides thereof, a vertically disposed T-shaped post integral with the side frames and arranged in said opening between said columns, a bolster having its ends shaped to contact with the columns and posts over relatively large bearing areas, said T-shaped post being of substantially the same transverse width as each column.

5. In a car truck, a side frame having columns at opposite sides of a bolster opening, a post rigidly united with the side frame and arranged in said bolster opening, and a bolster extending into the bolster opening and shaped to engage said post and said columns, a portion of the post being of substantially T-shape in horizontal section, and the end of the bolster being correspondingly shaped and engaging the T-shape portion of the post.

6. In a car truck, a side frame having columns at opposite sides of a bolster opening, a post rigidly united with the side frame and arranged in the bolster opening, each of the opposite sides of the upper portion of the post being of non-rectilinear shape horizontally, and a bolster extending into the bolster opening and shaped to engage the upper portion of said post and said columns, said bolster and the upper portion of said post being constructed and arranged so as to form a positive lock between the bolster and the side frame.

ALBERT F. LEPPLA.