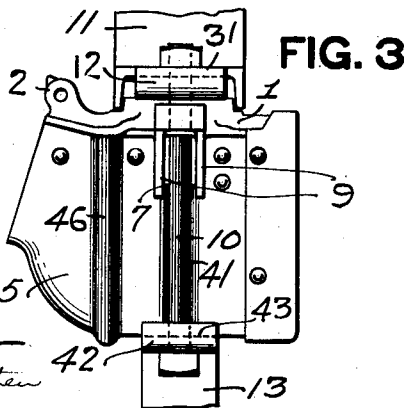
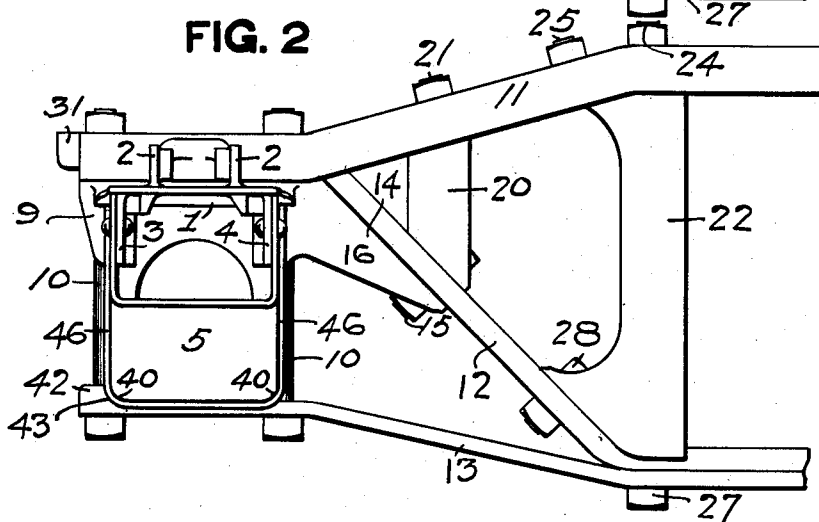
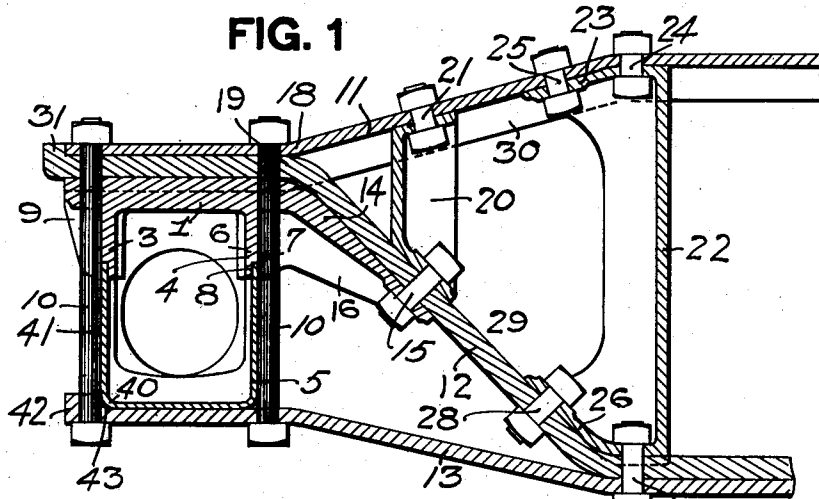


L. G. WOODS.
RAILWAY JOURNAL BOX AND TRUCK FRAME.
APPLICATION FILED JULY 1, 1908.

933,809.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 1.



WITNESSES.

J. R. Keller
Robert C. Follen

INVENTOR.

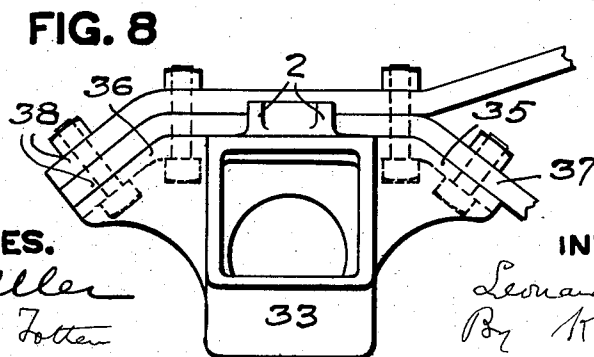
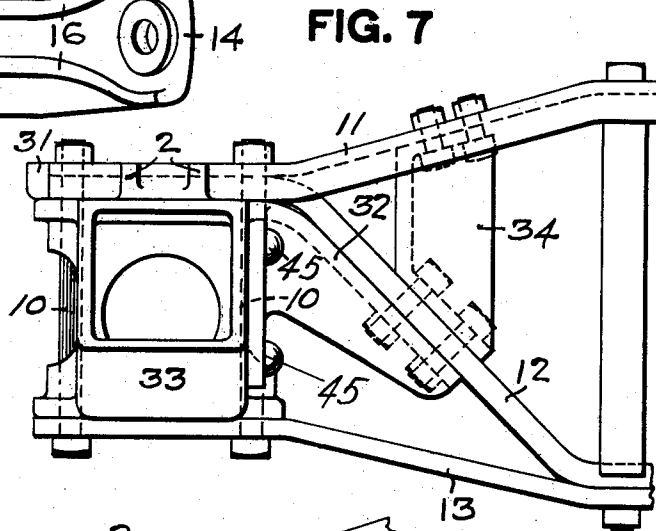
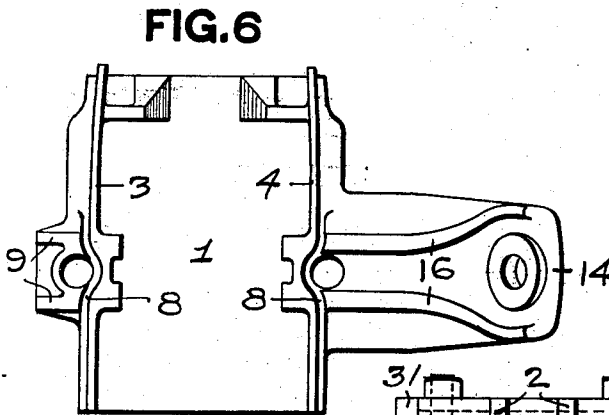
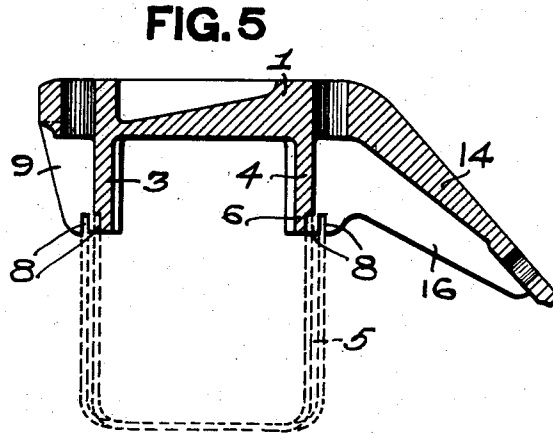
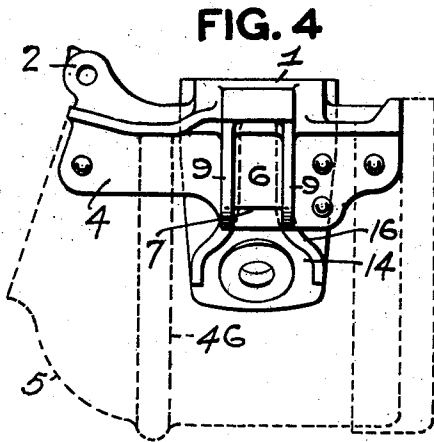
Leonard G. Woods
By Kay & Follen
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

LEONARD G. WOODS, OF PITTSBURG, PENNSYLVANIA.

RAILWAY JOURNAL-BOX AND TRUCK-FRAME.

933,809.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed July 1, 1908. Serial No. 441,329.

To all whom it may concern:

Be it known that I, LEONARD G. WOODS, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Railway Journal-Boxes and Truck-Frames; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to railway journal boxes and truck frames, its main object being to stiffen the outer portion of the truck frame and especially the portion thereof above the journal box so as to prevent it from bending upward and allowing the journal box to get out of square.

The invention consists, generally stated, in combining with the side frame such as in a diamond frame truck, a strengthening member underneath the bottom arch bar extending outwardly from a point between the bolster guide and journal box to make rigid the outer portion of the side frame, and prevent the bending of the frame at the meeting point of the arch bars. This is preferably accomplished by providing the journal box with a laterally projecting portion or arm extending toward the middle of the side frame and connected thereto so as to both brace the box and hold it in proper vertical alinement and stiffen the truck frame from the point at which it is connected to the same.

In the accompanying drawings Figure 1 is a longitudinal section of the side frame of a truck illustrating the different parts of the invention; Fig. 2 is a side view of the same; Fig. 3 is a side view of the box; Fig. 4 is a side view of the top portion, the box being shown in dotted lines so as to better illustrate the position of the parts; Fig. 5 is an enlarged cross section of the top portion of the box showing the laterally projecting arm; Fig. 6 is a bottom view of such top portion or section of the box indicating in dotted lines the position of the pressed metal bottom portion as it is fitted to the box; Fig. 7 is an illustration of the invention applied to a cast iron box; and Fig. 8 is a view showing another form of the invention.

The invention may be employed in connection with any suitable truck frame, it being intended broadly to cover the same where any bracing means are employed, as above stated, which extend outwardly from a point between the bolster guide and the journal box, and serve the function of mak-

ing rigid the outer portion of the frame, such as by preventing the bending of the frame at the meeting point of the arch bars. This is most conveniently accomplished by adding to the journal box itself an inwardly projecting arm which can be connected in any way to the truck frame between the bolster guide and the journal box. The preferred form of the invention is illustrated in connection with certain improvements in journal boxes made by me as set forth in applications for Letters Patent filed by me July 5, 1907, Serial No. 382,336, and Feb. 28, 1908, Serial No. 418,336, and I will first describe the invention as applied to truck frames where such boxes are employed. The top portion 1 is preferably of the same general construction as set forth in said applications for patent, having the usual lugs at the forward or outer end for mounting the journal box lid and being also provided with the inner flanges 3 4 to which the pressed metal body or lower portion 5 is riveted, as illustrated, the sides of this body extending upwardly outside of the flanges 3 and 4 and fitting against the lower face of the top portion 1. This box, as so constructed, is illustrated as mounted in the side frame of the truck, said side frame having the top arch bar 11, the lower arch bar 12 and the tie bar 13. On the inner face of the box I provide the lateral extension or arm 14 which extends inwardly toward the mid portion of the side frame and preferably extends outwardly and downwardly, bearing against the bottom arch bar 12 and being bolted thereto as at 15. In connection with my improved box above described, I am enabled to form such laterally projecting arm with but little additional metal and weight, as the flanges 9 of the top portion which extend upwardly so as to brace the top portion on each side of the journal box bolts 10 can be carried out as at 16 to brace this arm and give a strong and rigid construction for the combined journal box and arm. This laterally extending arm of the journal box connected to the arch bar serves to brace the frame and make it rigid at the meeting point of the top and bottom arch bars, and removes the tendency to force the journal box out of square, so stiffening the entire truck frame. In connection with said projecting arm I prefer to employ a tie member 20 extending between the top and bottom arch bars and bolted to both, for

example, by the bolts 15 which connect the arm 14 to the bottom arch bar and by the bolt 21. Such tie member in connection with the laterally projecting arm 14 braces the outer portion of the side frame, very materially stiffening the same, spacing the top and bottom arch bars apart mid-way between the bolster guides 22 and the journal box. In this same connection while I may employ any suitable form of bolster guide, as illustrated in the drawings I prefer to employ the one shown in Figs. 1 and 2, being of U-form in cross section and having the flange 23 extending out along the lower face of the top arch bar and connected thereto by the bolts 24 and 25, while the base has the flange 26 extending at an upward incline along the top face of the bottom arch bar, being connected to both the bottom arch bar and the tie bar 13 by the bolt 27, while its extension 26 is connected only to the bottom arch bar by the bolt 28. It will thus be seen that the bottom arch bar is braced not only by the arm 14 of the journal box and by the spacing member 20 but this upwardly inclined arm of the bolster guide gives support to the bolster guide to resist the pounding action of the bolster, and it is aided in so doing by the arm 14 extending inwardly from the box and secured to the bottom arch bar.

Where the invention is employed in connection with a cast metal box 33, as in Fig. 7, the laterally projecting arm 32 extends outwardly to the bottom arch bar and is bolted thereto, it being preferred to employ a like spacing member 34 between the top and bottom arch bars. This arm can be made a separate piece and riveted or bolted to the box, as illustrated in said figure at 45. I may also provide a box with laterally projecting arms on each side, cast as part of the box, as shown at 35 and 36, Fig. 8, providing a box suitable for either the right or left side of the side frame, and in that case I carry the top and bottom arch bar down over the outer side arm as at 37 38, and bolt them thereto. Where the arm is carried low enough down on the box it is possible to do away with the tie bar between the lower portion of the box and the bottom arch bar and this is also illustrated in connection with Fig. 8.

Where the invention is used in the preferred form, as illustrated in connection with Figs. 1 and 6, with the body portion of the journal box formed of pressed metal, I prefer to brace the lower portion of the journal box through the tie bar in addition to the use of the regular journal box bolts. The lower body portion 5 of the journal box is formed with curved corners as illustrated at 40, the journal box bolts fitting in the depressed corrugations 41, and the box itself extending out somewhat beyond the inner

edges of said bolts. To give such support to the bottom of the box I upset the outer end of the tie bar 13, forming a thickened portion 42 with a concave face 43 into which the curved edge or corner of the box fits, as illustrated in Figs. 1 and 2. This upset portion preferably extends for the full width of the tie bar and gives positive support to the box against movement longitudinally of the frame.

In the use of the invention the load is applied to the center of the truck frame, and being supported on the axles through the journal boxes this reaction has a tendency to bend up the top and bottom arch bars at their meeting points. This in turn will throw the lower portion of each journal box outward if it is not held against such tendency by the tie bar. These strains naturally come on the journal box and tend to set it askew. If the box is strong enough to maintain its square shape the arch bars from the meeting point out are held in substantially horizontal position, but if the box is not strong enough in this respect the arch bar portions above referred to bend up and the box is bound to come askew. By my invention I am enabled to overcome this tendency, as the arm projecting out from the box and connected to the bottom arch bar holds it rigid at this point, stiffening the meeting points of the top and bottom arch bars and relieving the box from such tendency, the box with its arm extending under the bottom arch bar, so forming a strengthening member to the side frame from a point between the bolster guide and the box to the outer end of the box. This action is further resisted by the use of the spacing member 20, which, with the arm projecting in from the box, forms a supplemental truss within the arch bars.

What I claim is:

1. The combination of a diamond side frame, and a strengthening member separate from the side frame extending underneath and secured to the bottom arch bar at a point between the bolster guide and journal box and extending outwardly to the end of the frame to make rigid the outer portion of the side frame.

2. The combination of a diamond side frame having top and bottom arch bars and a tie bar, and a strengthening member separate from the side frame extending underneath and secured to the bottom arch bar at a point between the bolster guide and journal box and extending outwardly to the end of the frame to make rigid the outer portion of the side frame.

3. The combination of a diamond side truck having top and bottom arch bars and a tie bar, a strengthening member separate from the side frame and secured to the bottom arch bar at a point between the bolster

guide and journal box and extending underneath the bottom arch bar to the junction of the top and bottom arch bars.

4. The combination with a side frame, of a journal box secured therein, said journal box having a pressed body portion and a rigid top portion and said rigid top portion having a laterally projecting arm secured to the side frame.

5. The combination of a diamond frame truck having top and bottom arch bars, and a journal box secured therein having a pressed body portion and a rigid top portion, said top portion having a laterally projecting arm secured to the bottom arch bar.

6. The combination with a diamond side frame, of a journal box secured thereto and having a laterally projecting arm extending under and secured to the bottom arch bar.

7. The combination of a diamond side frame, a journal box secured thereto and having a laterally projecting arm extending out therefrom and secured to the bottom arch bar, and a spacing member connecting the top and bottom arch bars at or near the point where the journal box arm is secured to the bottom arch bar.

8. The combination of a diamond side frame, a journal box secured thereto and

having a laterally and downwardly projecting arm fitted to the lower face of the bottom arch bar and secured thereto.

9. The combination of a diamond side frame having a journal box secured thereto and having a laterally projecting arm extending under the bottom arch bar and secured thereto, and a bolster guide between the arch bars having an upwardly inclined flange portion fitting on and extending up the top face of the bottom arch bar and secured thereto.

10. The combination of a diamond frame truck having a top and bottom arch bar and tie bar, and a journal box secured in the frame and provided with a pressed plate body portion the lower corners of which are rounded, and the tie bar having the upset outer end curved corresponding to the corner of the box and giving support thereto, and journal box bolts securing the box in place.

In testimony whereof, I the said LEONARD G. Woods have hereunto set my hand.

LEONARD G. WOODS.

Witnesses:

A. STUCKI,

R. J. BROWN.