

E. M. RICHARDSON.
TRUCK SIDE FRAME.
APPLICATION FILED AUG. 28, 1909.

958,541.

Patented May 17, 1910.

Fig. 1.

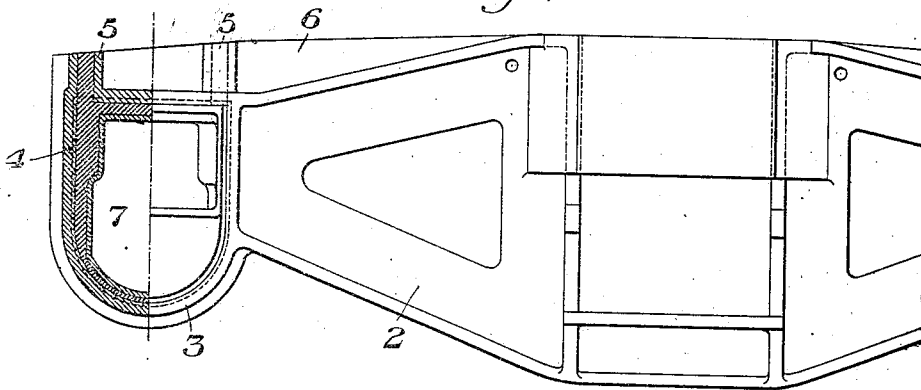


Fig. 2.

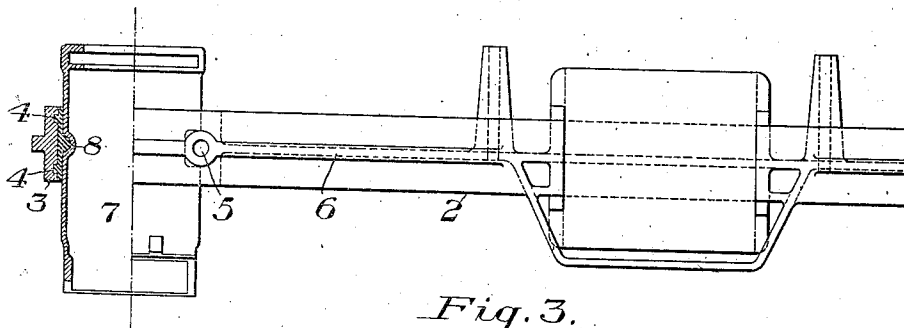
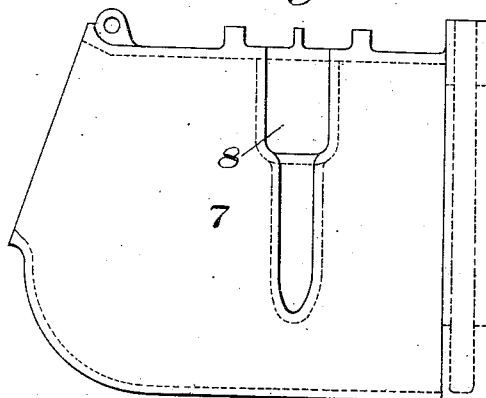


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

EDWARD M. RICHARDSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE NATIONAL MALLEABLE CASTINGS COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

TRUCK SIDE FRAME.

958,541.

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To all whom it may concern:

Be it known that I, EDWARD M. RICHARDSON, of Chicago, Cook county, Illinois, have invented a new and useful Improvement in Truck Side Frames, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which:

Figure 1 is a front elevation of my improved side frame partly in section; Fig. 2 is a top plan view partly in section; and Fig. 3 is an enlarged view showing my preferred form of journal box.

My invention relates to side frames for car trucks, and is designed to provide an improved construction therefor.

Heretofore these truck frames have been built up of rolled metal sections, secured together by means of bolts or rivets, the journal boxes being secured between the several members of the frame with bolts. In other cases, the journal boxes have been cast integrally with the truck frame, or a part thereof, the variations in shrinkage of the metal have varied the distance between the journal box centers. Moreover, such cast journal boxes must be of the same metal as the side frame. Furthermore, if the journal box is injured, the entire frame must be discarded.

My invention overcomes these difficulties, and consists in forming the side frames with end straps or partial straps forming recesses or seats within which the separately formed boxes are seated and secured. I preferably secure the journal boxes in position by casting metal between them and the walls of the strap, said metal serving to fasten the journal boxes and secure them in place. In this manner, the box may be made of other metal than the frame proper, alignment and spacing may be secured by adjustment of the boxes relative to the frame before securing them in place, and a simple and strong structure is afforded.

In the drawings, 2 represents a cast side frame which I have shown as formed in one piece, though it may be formed of two or more parts. The details of the form and size of the frame are immaterial to my invention and may be widely varied.

At each end of the frame, I cast a yoke or strap 3, to form a recess or seat, the opening in which is larger than the journal box.

As shown, the walls of this recess are provided with grooves 4, 4, and the upper ends at each side are provided with risers or pouring gates 5, 5. These pouring gate openings extend down through the cast body of the bolster, and preferably are formed as swelled portions of the rib or web 6. The grooves 4, 4 preferably extend entirely around the opening in the strap, both at top, sides and bottom, if the complete strap or yoke is used.

In forming the journal box, I prefer the shape shown in Fig. 3, in which the box 7 is provided with vertically extending side grooves 8. These side grooves are positioned so as to be intermediate of the walls of the yoke or strap when the box is in position. When the boxes are assembled within the yoke openings and at a proper distance apart with suitable alignment, molten metal is fed into the gate openings, thus filling said space between the journal boxes and the walls of the recess and securing the boxes in place. This metal flows into and fills the grooves in the walls of the recess and the external grooves of the journal box, thus firmly securing the box in place.

The advantages of my invention will be obvious to those skilled in the art. The frame and box may be made of different metals to suit every requirement. The proper spacing of the journal boxes and their proper alignment may be accurately attained, owing to the play between the boxes and the walls of the recess, before securing in place. The boxes may therefore be properly lined up and exactly spaced the same distance apart from center to center. The completed frame has all the advantages of a boltless truck, while at the same time, it is accurate in all dimensions without reference to inaccuracies in shrinkage of the cast frame or frame part.

As shown in the drawings, the recess to receive the box is formed by a strap or yoke encircling the journal box. This is not essential as the recess or seat may be formed by two or more walls which are provided with proper grooves to receive and secure the cast metal poured between the journal box and the walls of said recess.

The frame and the boxes may be made of any desirable metal, the frame being preferably of steel, while the box may be of gray iron, malleable iron, semi-steel or steel. The

metal forming the connection may be of iron or steel or any desirable metal.

Many changes may also be made in the form and shape of the frame, the number of its parts, the shape and extension of the recesses and the boxes. Instead of casting the securing metal between the box and the wall of the recess, the boxes may be secured in place by pressing the walls of the recesses or portions thereof into engagement with the box to secure it in place, and other ways of securing the box within the recess may be used, without departing from my invention.

I claim:

1. A truck side frame having a recess provided with top and side walls, a separately formed axle supporting journal box, and means to rigidly secure the box to the side walls of the recess; substantially as described.

2. A truck side frame provided with recesses or seats, each of said recesses having top and side walls, and a separately formed axle supporting journal box rigidly secured to the walls of each recess; substantially as described.

3. A truck side frame having end recesses provided with top and side walls, a separately formed axle supporting journal box in each of said recesses, grooves in said journal boxes, and means coacting with said grooves for securing the boxes to the recesses in the frame; substantially as described.

4. A truck side frame having an end recess and a separately formed journal box secured therein by metal cast between the box and the walls of said recess; substantially as described.

5. A truck side frame having an end recess with inner grooves, and a separately formed journal box having a groove, said

box being secured in the recess by metal cast between the same and entering said grooves; substantially as described.

6. A truck side frame having an end yoke, a pouring opening leading into the yoke opening, and a journal box secured in the opening by metal cast between the box and yoke; substantially as described.

7. A truck side frame having separately formed journal boxes, the side frame and journal boxes being secured to each other by cast metal; substantially as described.

8. A truck side frame having end yokes provided with ribs, separately formed journal boxes surrounded by the yokes, grooves in said journal boxes, and means to rigidly secure the side frame to the grooves in the journal boxes; substantially as described.

9. The method of forming truck side frames having separately formed journal boxes, which consists in first forming the frame and boxes, then placing the frame in proper relation with the boxes, and then securing the boxes to the frame by cast metal; substantially as described.

10. The method of forming truck side frames having separately formed journal boxes, which consists in first forming the frame and boxes with grooves, then placing the frame in proper relation with the boxes, and then pouring metal between the frame and boxes to fill the grooves and space, to form a cast joint for securing the boxes to the frame; substantially as described.

In testimony whereof, I have hereunto set my hand.

EDWARD M. RICHARDSON.

Witnesses:

WM. CASE,

THOMAS H. ROBINSON.