(No Model.)

W. E. COFFIN.

CAR FRAME.

No. 591,187. Patented Oct. 5, 1897.

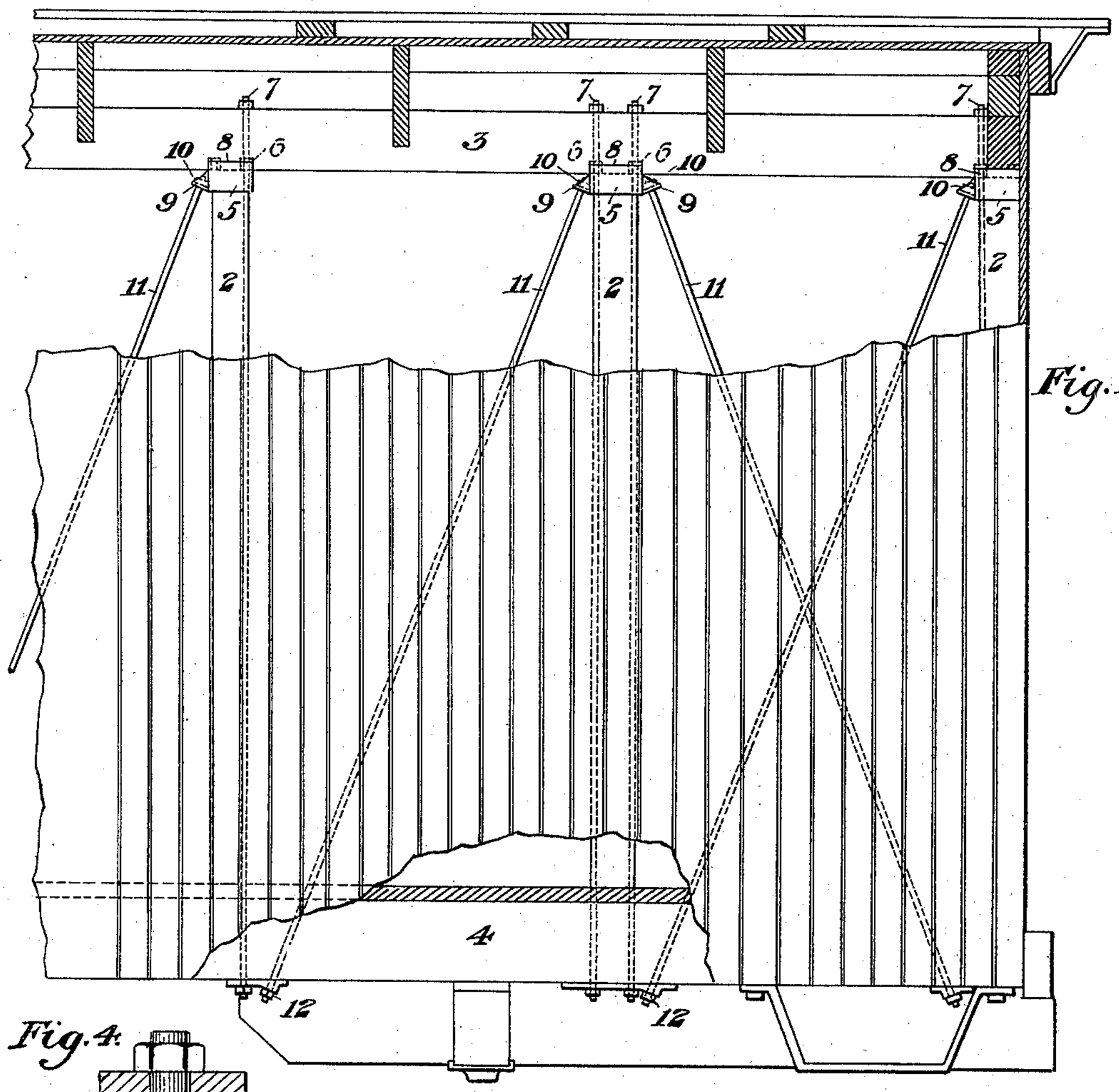


Fig. 1.

Fig. 4.

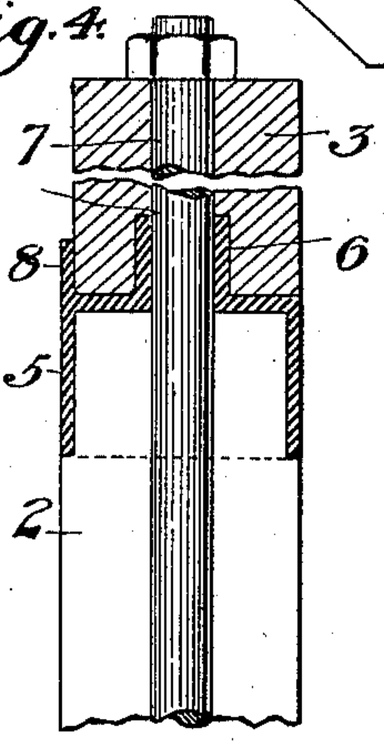


Fig. 2.

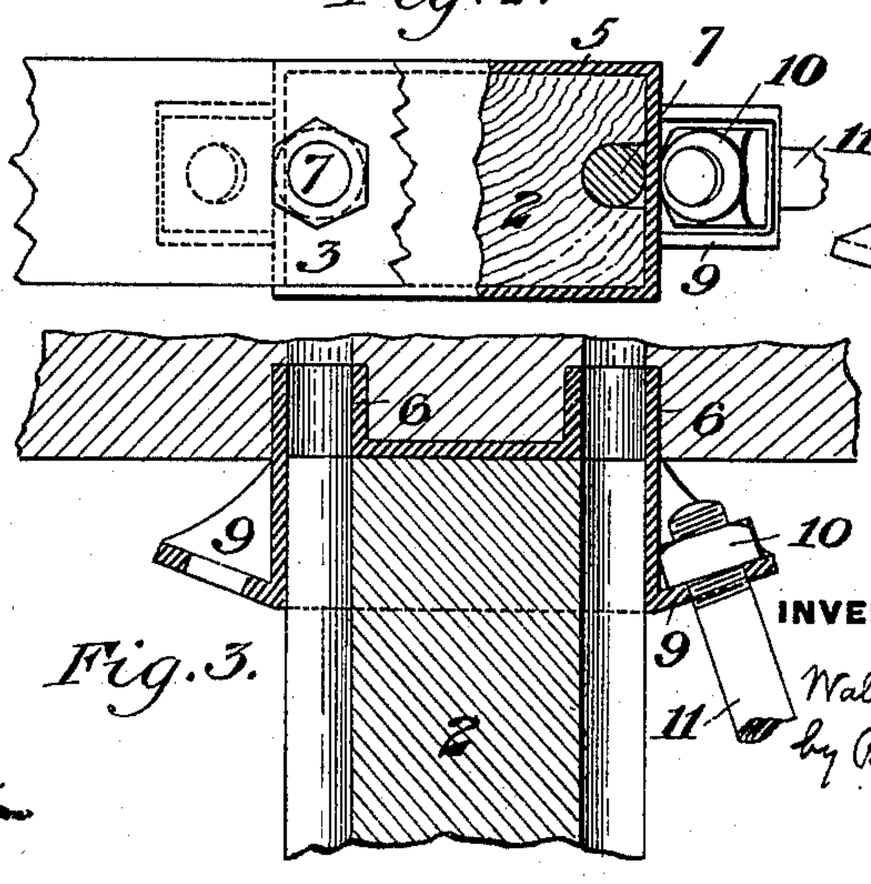
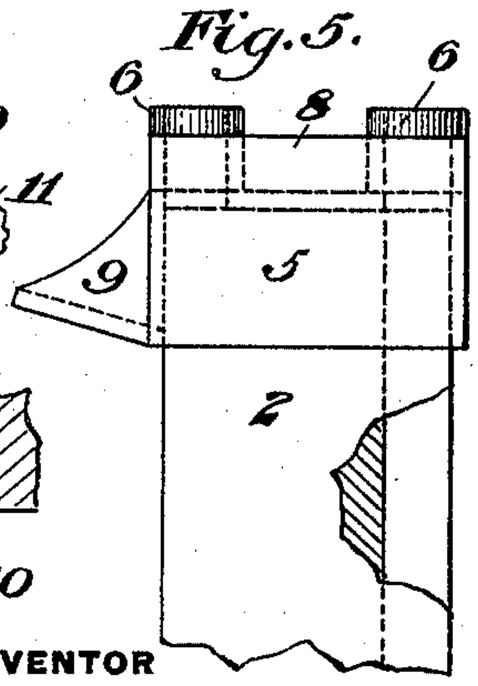


Fig. 5.



WITNESSES

by J. Holdship

T. A. Bonnell Jr.

Fig. 3.

INVENTOR

Walter E. Coffin

by Baxendell & Baxendell

his attorneys.

UNITED STATES PATENT OFFICE.

WALTER E. COFFIN, OF CLEVELAND, OHIO, ASSIGNOR TO THE NATIONAL MALLEABLE CASTINGS COMPANY, OF SAME PLACE.

CAR-FRAME.

SPECIFICATION forming part of Letters Patent No. 591,187, dated October 5, 1897.

Application filed December 5, 1896. Serial No. 614,528. (No model.)

To all whom it may concern:

Be it known that I, WALTER E. COFFIN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Improvement in Car-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 side elevation of one end of a car broken to show the framing. Fig. 2 is a plan view showing the side plate and cap broken away. Fig. 3 is a sectional elevation of the post-cap and side plate, the tie-rods being omitted. Fig. 4 is a cross-section of the side plate and cap, showing the tie-rod in place. Fig. 5 is a side elevation of a modified form of cap.

Heretofore the braces for railway-car frames have commonly been composed of timbers extending diagonally between the opposite corners of adjacent posts for the purpose of supporting and bracing the upper framework of the car, or where, as has sometimes been the case, metal brace-rods have been substituted for the timbers they have been extended upwardly through the side plates of the car-roof, necessitating the cutting away and weakening of the latter to a very great extent. The brace-timbers also have a tendency to transmit in an upward direction buffing strains which are put on the car, so as to strain the roof-plates and to loosen the framework, and the lifting of the posts and braces which thus results has the effect of allowing small particles of grain, &c., to gather underneath them and eventually to force them permanently out of position. To remedy such loosening of the entire framework, it is necessary to remove and replace the posts and braces, but this is an operation attended with considerable expense and may have to be repeated several times during the life of the car. Furthermore, such braces when loose are apt to wear into the adjoining timbers, and to repair such injury and to restore the car to the required rigid condition the bracing-timbers must be removed or shims of wood or metal inserted; but these soon become loose and require renewed repairs.

My invention overcomes the objections above noted and substitutes for the bracing-timbers metal rods which connect the car-sill with the top of the posts, so that during the violent backward-and-forward racking motion to which the cars are subjected in service and in switching the brace-rods will continually exert a downward tension on the posts and will at all times hold the posts and framework rigidly. The use of the metal brace-rods also relieves the car of the great weight of the heavy bracing-timbers, but is not subject to the disadvantage of cutting and weakening the side plate in order to accommodate the nuts, as in the case of such metal braces as have been employed heretofore.

In the drawings, 2 represents the posts of the car-frame. 3 is the side plate at the roof of the car, and 4 is the sill at the bottom. I provide each post with a metal cap 5, fitted upon the top of the post, so that the post shall project into the same as into a socket, and when the parts of the framing are fitted together the top of the cap is interposed between the bottom of the side plate and the post, and one or more upwardly-projecting hollow sockets 6 on the top of the cap take into the bottom of the side plate and accommodate the tie-rods 7, which extend vertically in grooves on opposite sides of the posts. These sockets serve the purpose of tenons to hold the post to the side plate, but as the cap incloses the end of the post the post is not apt to split, as it often does when tenons are formed on the post itself. The cap has preferably a vertical flange 8 at its upper edge, which fits laterally against the side plate to enable the post to resist outward pressure, and at one or both ends of the cap is a projecting lug or open pocket 9, adapted to receive the nut 10 of the brace-rod 11, which passes through said lug and extends diagonally downwardly through the sill of the car, at the bottom of which it is secured by a nut 12. When the several brace-rods are put in tension, they hold down the post and brace the car rigidly, with all the advantages which I have stated above. To remove any of them, it is only necessary to take the nut from the upper end, whereupon the rod can then be pulled downward from the outside and can be replaced in like manner. The facility for

repair which the invention affords in this respect is an important advantage.

By holding the car in shape by means of my improvement I obviate the trouble experienced in the jamming of the doors, which results when the car-frame is pulled out of shape. Shrinking of the timbers and loosening of the framework can be quickly corrected merely by tightening the bolts of the brace-rods. Furthermore, my improved construction relieves the strain on the tie-rods of the posts and forms a much better and more durable truss for the car-frame than where wooden bracing is used. By dispensing with wooden braces I save the cutting of the belt-rail between the posts and am able to use larger and stronger posts than heretofore without increasing the size of the braces, as must be done in cases where bracing-timbers are used.

Within the scope of my invention many changes in the form and construction of the parts may be made by the skilled mechanic.

I claim—

1. A post-cap for car-frames adapted to fit on the top of the post and having an end lug or socket for the passage of the brace-rod, said end lug or socket being open at its upper side to receive the nut.

2. A post-cap for car-frames adapted to fit on the top of the post, having an end lug or socket for the passage of the brace-rod, and having vertical sockets adapted to enter the side plate and to receive the tie-bolts.

In testimony whereof I have hereunto set my hand.

WALTER E. COFFIN.

Witnesses:

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