

No. 809,734.

PATENTED JAN. 9, 1906.

A. E. OSTRANDER.

CROSS BEARER.

APPLICATION FILED JULY 18, 1905.

Fig. 1.

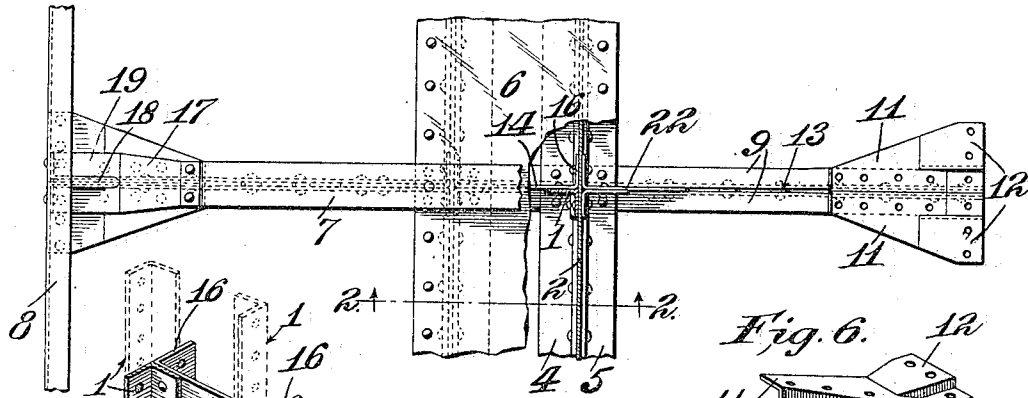


Fig. 5.



Fig. 6.

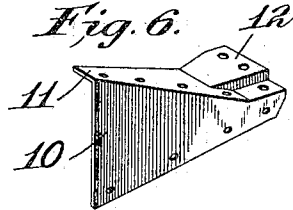


Fig. 2.

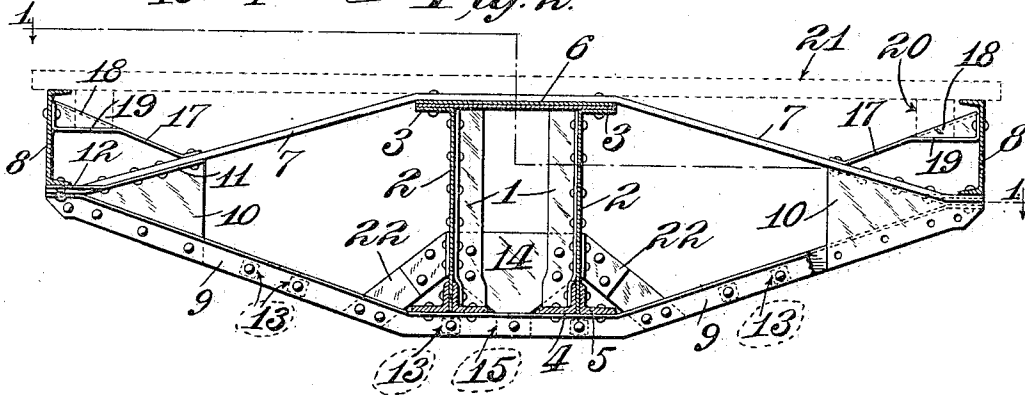


Fig. 3.

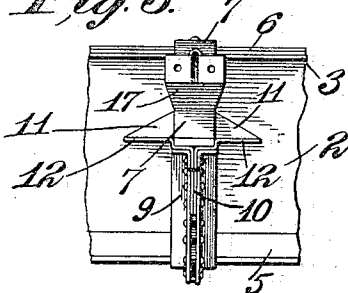
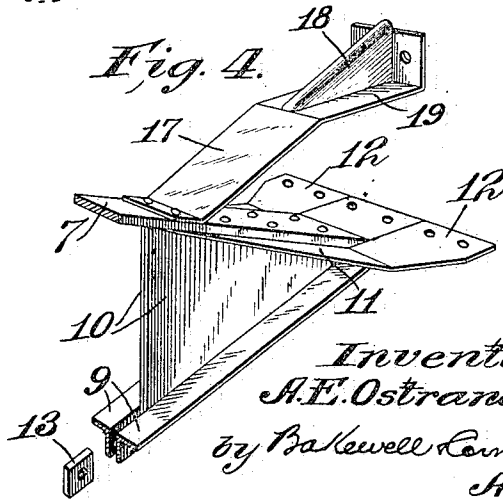


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

ALLEN E. OSTRANDER, OF PATERSON, NEW JERSEY, ASSIGNOR TO
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CROSS-BEARER.

No. 809,734.

Specification of Letters Patent.

Patented Jan. 9, 1906.

Application filed July 18, 1905. Serial No. 270,225.

To all whom it may concern:

Be it known that I, ALLEN E. OSTRANDER, a citizen of the United States, residing at Paterson, Passaic county, New Jersey, have invented a certain new and useful Improvement in Cross-Bearers, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a view, partly in top plan and partly in section, of a cross-bearer constructed in accordance with my invention. Fig. 2 is a sectional view on the line 2 2 of Fig. 1. Fig. 3 is an end view through the cross-bearer. Fig. 4 is a perspective view of portions of the compression and tension members. Fig. 5 is a detail perspective view of the tyers for the compression member, and Fig. 6 is a detail perspective view of one of the web members.

This invention relates to underframing for cars, and particularly to a cross-bearer of the truss type in which a tension member, a compression member, and a strut are employed.

The strut for the truss consists of the angles 1, riveted to the center-sill members 2, which center-sill members are provided at their upper edges with integral flanges 3, forming the top chord of a girder, the bottom chord consisting of angles 4 and 5, whose vertical flanges are secured to the webs of the center-sill members 2, the horizontal flanges of each angle projecting in a direction opposite to the other. The top cover-plates 6 are secured to the outwardly-turned flanges 3 of the center-sill members 2, preferably by rivets. A continuous flat top or tension member 7 extends from side sill to side sill, the side sills 8 being illustrated as being in the form of channels whose top flanges are in line with the top surface of the intermediate portion of the member 7, which passes over the tops of the center-sill members. The respective ends of the flat tension member 7 extend beneath the side sills and are secured to the bottom flanges thereof in a manner to be hereinafter described. The rolled-shape compression members 9 are illustrated as angles whose vertical flanges are parallel, and interposed between these angles 9 are the lower portions of a web member 10 in the

form of gussets arranged back to back and each having a top flange 11 riveted to the tension member 7 and an offsetted flange 12 at the end, which is secured directly to the bottom flange of the side sill. The end of the top flange of each gusset is interposed between the compression and tension members and secured by rivets, which pass there-through and also through the side sill. These gussets do not extend to the center sill, but terminate short thereof, and the intermediate spaces between the vertical flanges of the compression members 9 receive fillers, (illustrated as nuts 13,) through which rivets or bolts pass to hold them in place.

As will be seen from Fig. 2, the compression members also extend from side sill to side sill and pass beneath the center-sill members, to the lower flanges of which they are secured by suitable fastening devices. Angles 1, which cooperate with the center-sill members to provide the strut for the truss, are tied together by a web or tie-plate 14, whose side edges are fastened to said angles and whose bottom edge is provided with an extension 15, interposed between and connected to the vertical flanges of the bottom or compression member. This web is also secured to the webs of the center-sill members by fastening devices, which pass through the right-angular extensions 16 of said plate 14. The members 22 serve as tie members, as well as diagonal brace or stiffening members, and their upper ends are secured to the center-sill members, while their lower extremities are secured between the angles of the compression member of the truss. A diagonal brace and stiffening member 17 is secured to each side sill and near each end of the tension member 7. Diagonal brace or stiffener 17 is pressed out so as to form a rib 18 to add rigidity thereto and is for the purpose of keeping the forces or strains along a straight line. These diagonal braces and stiffeners 17 are provided with horizontal portions 19, in which the ribs 18 are pressed, said horizontal portions 19 being designed to receive the longitudinal nailing-strips 20 for the floor, so that the transverse floor member 21 may rest thereon and on the upper flanges of the side sills and the tops of the tension member 7.

From the foregoing description it will be observed that the truss is so constructed that

the weight of the car-body will be distributed to the center sills from the side sills through the trusses and that the distribution of the weight will be so equalized as to afford a maximum strength without unnecessarily increasing the weight.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A cross-bearer comprising a continuous flat top member, a continuous bottom member, the ends of the top and bottom member being connected, gusset-plates secured to the top and bottom members near their ends, car side sills to which the said top and bottom members are terminally secured, and diagonal braces connected to the side sills and to the top member; substantially as described.

2. In a railway-car, the combination with a center sill, of side sills, a flat plate tension member passing over the top of the center sill and beneath the side sills, a compression member passing below the center sill and connected to the tension member and side sills, and braces connected to the top plate tension member and to the side sills; substantially as described.

3. In a railway-car, the combination with a center sill, of side sills, a flat plate tension member passing over the top of the center sill and beneath the side sills, a compression member passing below the center sill and connected to the tension member and side sills, and pressed-steel braces connected to the top plate tension member and to the side sills; substantially as described.

4. In a railway-car, the combination with a center sill, of side sills, a flat plate tension member passing over the top of the center sill and beneath the side sills, a compression member passing below the center sill and connected to the tension member and side sills, and pressed-steel braces having ribs connected to the top plate tension member and to the side sills; substantially as described.

5. In a railway-car, the combination with a center sill and side sills, of a flat plate tension member passing over the center sill and under the side sills, angles comprising a compression member and extending from side sill to side sill, a gusset interposed between the angles and connected to the top plate tension member, braces connected to the side sills and the tension member, and braces connected to the compression member and the center sills; substantially as described.

6. In a railway-car, the combination with a center sill and side sills, of a flat plate tension member passing over the center sill and under the side sills, angles comprising a compression member and extending from side sill to side sill, a gusset interposed between the angles and connected to the top plate

tension member, and braces connected to the side sills and the tension member; substantially as described.

7. In a cross-bearer for cars, a flat plate tension member, a rolled-shape compression member, a strut, webs connecting the compression and tension members near their ends, and braces connecting the compression member and the strut; substantially as described.

8. In a railway-car, a cross-bearer having a continuous flat top tension member, a rolled-shape bottom compression member, web members connecting the top and bottom members, and diagonal braces connected to the top of the flat top tension member and to the upper portions of the side sills and forming supports for the nailing-strips of the floor; substantially as described.

9. In a railway-car, the combination with the center sills and the side sills thereof, of a flat plate tension member passing over the top of the center sill and beneath the side sills, a compression member passing beneath the center sill and secured to the side sills, and pressed-steel braces connected to the top of the tension member and to the upper portion of the side sills; substantially as described.

10. In a railway-car, the combination with the center sill and the side sills, a diaphragm interposed between the center-sill members and having its top edge below the neutral axis of the center sill, angles connected to the diaphragm and extending to points adjacent the top of the center sill, a tension member passing over the top of the center sill and extending from side sill to side sill, a compression member passing below the center sill and extending from side sill to side sill, and webs connecting the compression and tension members; substantially as described.

11. In a railway-car, the combination with the center sill and the side sills, a diaphragm interposed between the center-sill members and having its top edge below the neutral axis of the center sill, angles connected to the diaphragm and extending to points adjacent the top of the center sill, a tension member passing over the top of the center sill and extending from side sill to side sill, a compression member passing below the center sill and extending from side sill to side sill, webs connecting the compression and tension members, and braces connected to the top of the compression member and to the side sills; substantially as described.

12. In a railway-car, the combination with the center sill and the side sills, a diaphragm interposed between the center-sill members and having its top edge below the neutral axis of the center sill, angles connected to the diaphragm and extending to points adjacent the top of the center sill, a tension

member passing over the top of the center sill and extending from side sill to side sill, a compression member passing below the center sill and extending from side sill to side sill, webs connecting the compression and tension members, and braces connected to the compression member and to the center sill; substantially as described.

13. In a railway-car, the combination with the center sill and the side sills, a diaphragm interposed between the center-sill members and having its top edge below the neutral axis of the center sill, angles connected to the diaphragm and extending to points adjacent the top of the center sill, a tension member passing over the top of the center

sill and extending from side sill to side sill, a compression member passing below the center sill and extending from side sill to side sill, webs connecting the compression and tension members, braces connected to the top of the compression member and to the side sills, and braces connected to the compression member and to the center sill; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 1st day of July, 1905.

ALLEN E. OSTRANDER.

Witnesses:

THOMAS R. BROWN,
ROBT. A. JEFFERY.