

No. 836,133.

PATENTED NOV. 20, 1906.

A. E. OSTRANDER.

CROSS BEARER.

APPLICATION FILED MAR. 29, 1906.

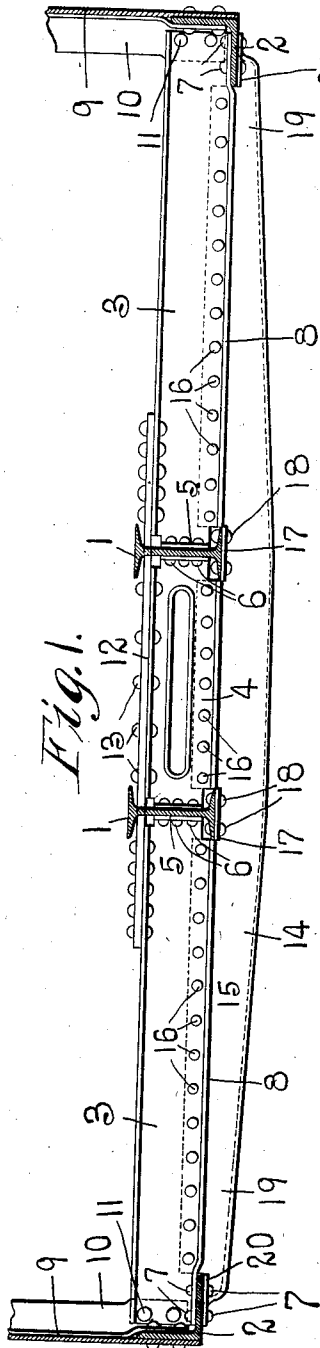


Fig. 1.

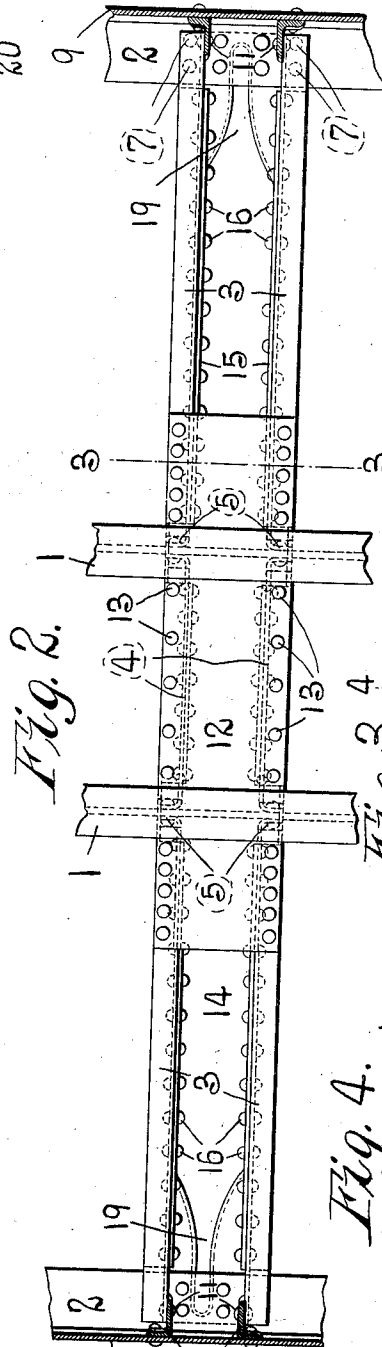


Fig. 2.

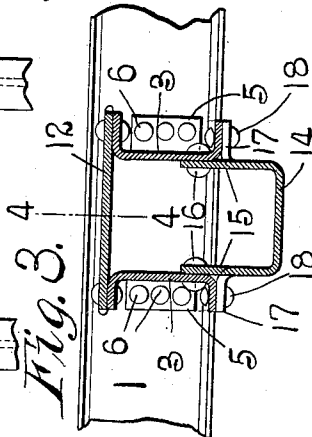


Fig. 3.

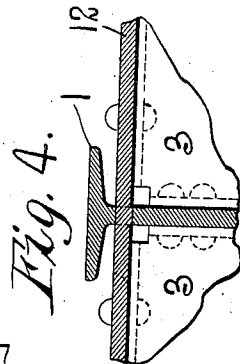


Fig. 4.

Witnesses:  
Dred Kunk.  
Nells L. Church.

Inventor:  
Allen E. Ostrander.  
by Parkwell Cornwall Attys.

# UNITED STATES PATENT OFFICE.

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

No. 836,133.

Specification of Letters Patent.

Patented Nov. 20, 1906.

Application filed March 29, 1906. Serial No. 308,744.

*To all whom it may concern:*

Be it known that I, ALLEN E. OSTRANDER, a citizen of the United States, residing at Paterson, 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 cross-sectional view through a car provided with a cross-bearer embodying the features of my invention. Fig. 2 is a plan view of the parts shown in Fig. 1. Fig. 3 is a detail sectional view taken on the line 3 3 of Fig. 2, and Fig. 4 is a detail sectional view taken on the line 4 4 of Fig. 3.

This invention relates to cross-bearers for cars; and the object of my invention is to provide a cross-bearer possessing great strength and which can be manufactured cheaply.

Referring to the drawings, which represent the preferred form of my invention, 1 designates the center sills of the car, which I have herein shown as consisting of I-beams, and 2 designates the side sills consisting of angles. The cross-bearer is made up of pressed channels or diaphragms 3, projecting laterally from the center sills and arranged with their flanges projecting in opposite directions, and diaphragms 4, interposed between the center sills. The webs of the channels 3 at their inner ends are bent at right angles to the body portions of said channels to form wings 5, through which rivets 6 pass to connect said channels to the center sills, and the outer ends of the channels are connected to the side sills 2 by rivets 7, passing through the bottom flanges 8 of the channels and through the horizontal legs of the angles which form the side sills.

The side walls 9 of the car carry the load and are provided with interior posts consisting of angles 10, and the inwardly-projecting legs of said angles are connected to the webs of the channels 3 by rivets 11. The diaphragms 4, which are interposed between the center sills, are of substantially box shape, and the end flanges of said diaphragms are connected to the center sills by the same rivets 6 which connect the inner ends of the channels 3 to the center sills.

A continuous compression-plate 12 is connected to the upper flanges of the channels 3 and to the upper flanges of the diaphragms 4 by rivets 13, and the webs of the I-beam center sills are slotted to permit said compression-plate to pass therethrough.

The tension member of the cross-bearer is formed by a continuous trough-shaped member 14 of truss form, having closed ends and upwardly-projecting legs 15, which are connected to the webs of the channels 3 and to the webs of the diaphragms 4 by rivets 16. At the center sills the legs of the trough-shaped member 14 are severed and bent at right angles to form flanges 17, which are connected to the bottom flanges of the I-beam center sills by rivets 18, or, if desired, said legs can be connected by an angle riveted to both pieces. The outer end portions of said trough-shaped member are contracted, as shown at 19 in Figs. 1 and 2, to present a finished appearance and also impart greater strength to said member, and the legs of said member at its opposite ends are also severed and bent outwardly to form flanges 20, said flanges being connected by an integral portion at the end of said trough-shaped member, so that practically continuous flanges are formed at its outer ends for connecting it to the horizontal legs of the side sill angles by the rivets 7. Another object of slotting the sills for the cover-plate or compression-plate 12 is to enable the floor to rest directly on the center sills and thereby provide a clear space under the floor to receive the pipes, wires, &c., of the car.

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

1. In a car provided with center sills, a cross-bearer comprising pairs of laterally-extending members connected to the center sills and to the sides of the car, a diaphragm interposed between the center sills, a compression-plate connected to said laterally-extending members and to said diaphragm, and a continuous tension member arranged between said pairs of laterally-extending members and being connected thereto and to the diaphragm and fastened at its outer ends to the side sills of the car; substantially as described.

2. In a car provided with center sills, a

cross-bearer comprising a plurality of members connected at their inner ends to the center sills and at their outer ends to the sides of the car, a diaphragm interposed between the center sills, a compression-plate connected to said members and to said diaphragm, and a continuous trough-shaped tension member having its legs secured to said members and to the diaphragm; substantially as described.

3. In a car provided with center sills, a cross-bearer comprising a plurality of channels projecting laterally from each center sill, a continuous compression-plate connected to the upper flanges of said channels, and a continuous trough-shaped tension member having its legs secured to the webs of said channels; substantially as described.

4. In a car provided with center sills, a cross-bearer comprising a plurality of channels extending laterally from each sill and arranged with their flanges projecting outwardly, a compression-plate connected to the upper flanges of said channels, and a continuous trough-shaped tension member having its legs secured to the inner faces of the webs of said channels; substantially as described.

5. In a car provided with center sills, a cross-bearer comprising a plurality of channels connected to each center sill and arranged with their flanges projecting outwardly, means for connecting said channels to the sides of the car, box-shaped diaphragms interposed between the center sills of the car, a continuous compression-plate connected to the upper flanges of the channels and to the diaphragms, a trough-shaped tension member connected to the webs of said channels

and diaphragms, and flanges on said tension member for connecting the same to the center sills and to the side sills of the car; substantially as described.

6. In a car provided with center sills, a cross-bearer comprising pairs of channels connected to the center sills and projecting laterally therefrom, diaphragms interposed between the center sills, a compression-plate connected to said channels and diaphragms and passing through slots in the center sills, a trough-shaped tension member having its legs secured to the webs of the channels and diaphragms, and a continuous flange at each end of said tension member for connecting the same to the side sills of the car, the outer ends of said tension member being contracted; substantially as described.

7. In a car provided with center sills, a cross-bearer comprising laterally-extending members connected to the center sills and to the side sills of the car, diaphragms arranged between the center sills, a continuous compression-plate connected to the upper faces of said members and diaphragms, and a tension member of truss form arranged beneath the center sills and connected to said members and to the diaphragms; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 20th day of March, 1906.

ALLEN E. OSTRANDER.

Witnesses:

HAROLD K. SMITH,  
ROBT. G. JEFFERY.