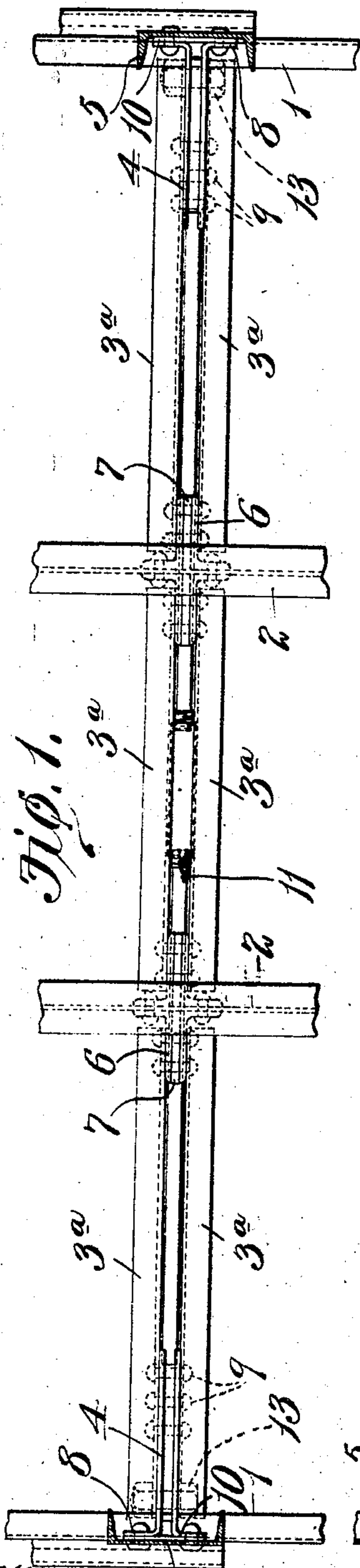


No. 849,827.

PATENTED APR. 9, 1907.

F. McF. BRINCKERHOFF.  
CAR CONSTRUCTION.  
APPLICATION FILED DEC. 14, 1906.



Witnessed:  
Geo. R. Ladson.  
Melch. Church.

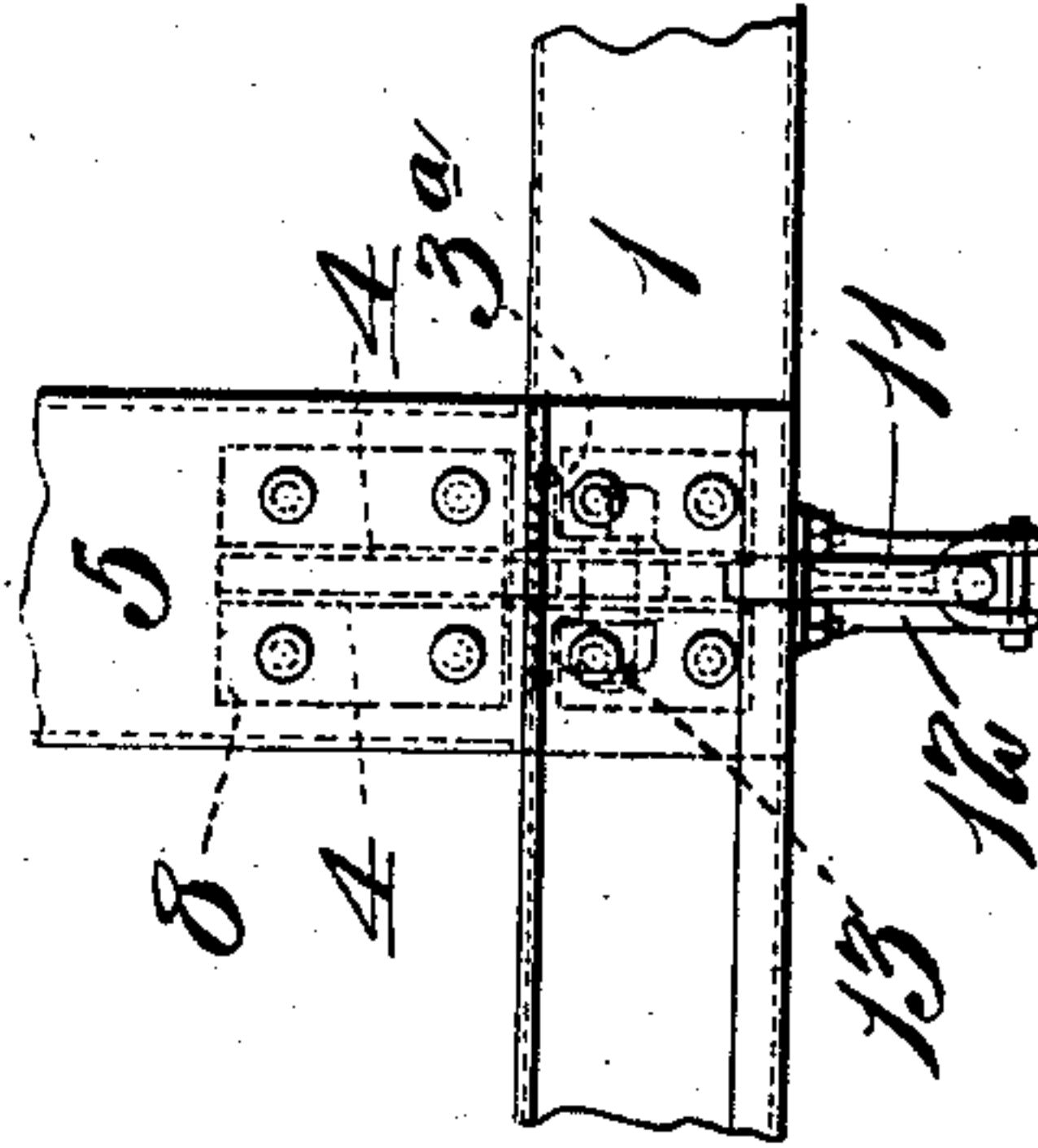
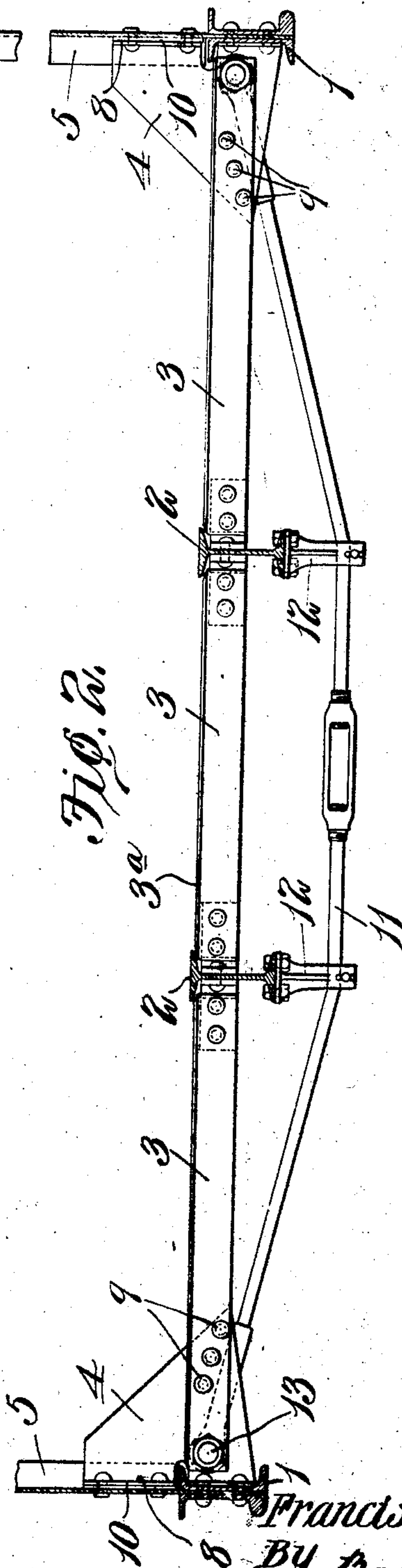


Fig. 3.

Inventor,  
Francis M. F. Brinckerhoff.  
By Baker & Co. Attys.



# UNITED STATES PATENT OFFICE.

FRANCIS McFARLAN BRINCKERHOFF, OF NEW YORK, N. Y., ASSIGNOR OF ONE-THIRD TO HUGH HAZELTON AND ONE-THIRD TO LEWIS B. STILLWELL, OF NEW YORK, N. Y.

## CAR CONSTRUCTION.

No. 849,827.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed December 14, 1906. Serial No. 347,823.

*To all whom it may concern:*

Be it known that I, FRANCIS McFARLAN BRINCKERHOFF, a citizen of the United States, residing at New York, N. Y., have invented a certain new and useful Improvement in Car Construction, 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 plan view showing a cross-bearer and means for connecting it to the side sills and vertical side wall-posts of a car. Fig. 2 is a cross-sectional view through a car, showing, in side elevation, the parts illustrated in Fig. 1; and Fig. 3 is a detail view showing, in side elevation, one of the vertical posts and the side sill of the car.

This invention relates to the construction of cars.

The object of my invention is to provide a novel means of connecting a side post and a transversely-extending member—such, for example, as a cross-bearer—to the side sill of a car. Other desirable features of my invention will be hereinafter pointed out.

Referring to the drawings, which represent the preferred form of my invention, 1 designates the side sills, and 2 the center sills, which are preferably flanged members. The cross-bearer or needle-beam consists of members 3, arranged between the center sills and between the center sills and side sills, said members being connected to the side sills by gusset-plates 4, which also secure the vertical side wall-posts 5 to the side sills.

The members 3 preferably consist of pairs of angles arranged with their horizontal legs 3<sup>a</sup> projecting outwardly in opposite directions and with their vertical legs spaced apart to receive the shanks of T-shaped brackets, which connect them to the center sills. These brackets may consist of castings or two L-shaped pieces 6, with a filler 7 interposed between them, as shown in Fig. 1, the latter construction being preferable. Pairs of gusset-plates 4 are used for connecting the members 3 to the side sills, and each of said gusset-plates is provided at its outer edge with a vertically-disposed flange 8, the

flanges of each pair of plates projecting in opposite directions. The gusset-plates extend down between the two angles 3 and are secured by fastening devices 9 to the vertical legs of said angles. The lower edges of the gusset-plates extend below the lower edges of the vertical legs of the angles 3, and the flanges 8 on said plates are secured to the web of the side sill. Said plates extend upwardly some distance above the side sills to provide a support for the side posts and are provided with notches to receive the upper flange of the side sill, as shown in Fig. 2. These gusset-plates not only reinforce the connection between the side posts and side sill, but also act as braces to aid in squaring up the frame of the car with the floor. Preferably a plate 10 is connected to the flanges of each pair of gusset-plates to stiffen them. The side posts herein shown are channels having their legs removed at the lower ends thereof, so that the webs can lie flat against the outer face of the side sill. The flanges on the gusset-plates above the side sill are arranged between the legs of the side posts, so that a very neat and rigid construction is produced.

When I construct the cross-bearer from angles, I prefer to use a truss-rod 11, extending from side sill to side sill and passing under queen-posts 12, secured to the center sills. The ends of said rod are arranged between the pairs of angles 3, adjacent the side sill, and are connected thereto by bolts 13 passing through eyes on the ends of the rod. The cross-bearer could be made from commercially-rolled members of various form—such, for example, as channels or I-beams—but the same means would be employed for connecting them to the side sills.

While I have herein illustrated my invention as being employed for connecting the members of a cross-bearer to the side sills, it will of course be understood that the same construction could be used for connecting bolster members to the side sills, as my broad idea consists in connecting a transversely-extending member to a side sill by means of a gusset-plate which projects above the top of said sill and has a side post connected thereto.

Having thus described my invention, what



I claim as new, and desire to secure by Letters Patent, is—

1. In a car construction, the combination of a side sill having a channel-shaped side post connected directly thereto, a pair of transversely-extending flanged members, a pair of gusset-plates connected to the webs of said members and extending above the side sills and being arranged between the inwardly-projecting legs of said post, and vertically-disposed flanges at the outer edges of said plates which are connected to the side sill and to the web of said side post; substantially as described.

2. In a car construction, the combination of a flanged side sill, a vertical channel-shaped post having the flanges at the lower end thereof cut away so that its web will lie against the outside face of the side sill, fastening devices passing through said web to connect it to the side sill, a pair of transversely-extending flanged members arranged with their flanges projecting in opposite directions, a pair of gusset-plates arranged be-

tween said members and connected to the webs thereof, flanges at the outer edges of said gusset-plates arranged between the flanges on the side post above the side sill, and fastening devices passing through said flanges to connect them to the side sill and side post; substantially as described.

3. In a car construction, the combination of side sills, center sills, pairs of flanged members connected to the side sills and center sills, queen-posts projecting downwardly from the center sills, a truss-rod extending underneath said queen-posts and having its ends arranged between the pairs of flanged members, and fastening devices connecting said rod to said members; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 3d day of December, 1906.

FRANCIS McFARLAN BRINCKERHOFF.

Witnesses:

W. EVERITT RUNDLE,  
THOMAS GREGORY.