

No. 827,489.

PATENTED JULY 31, 1906.

H. W. WOLFF.
END BRACING FOR CARS.
APPLICATION FILED MAY 12, 1906.

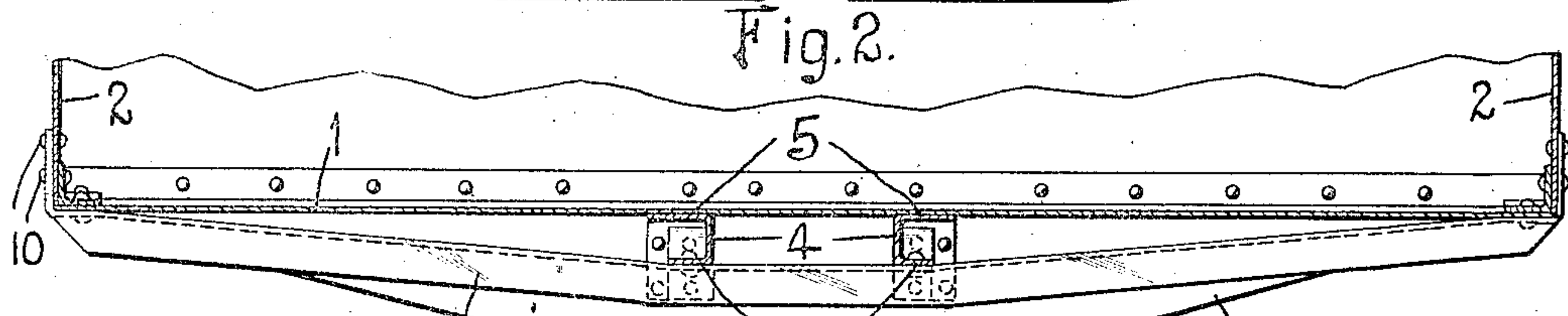
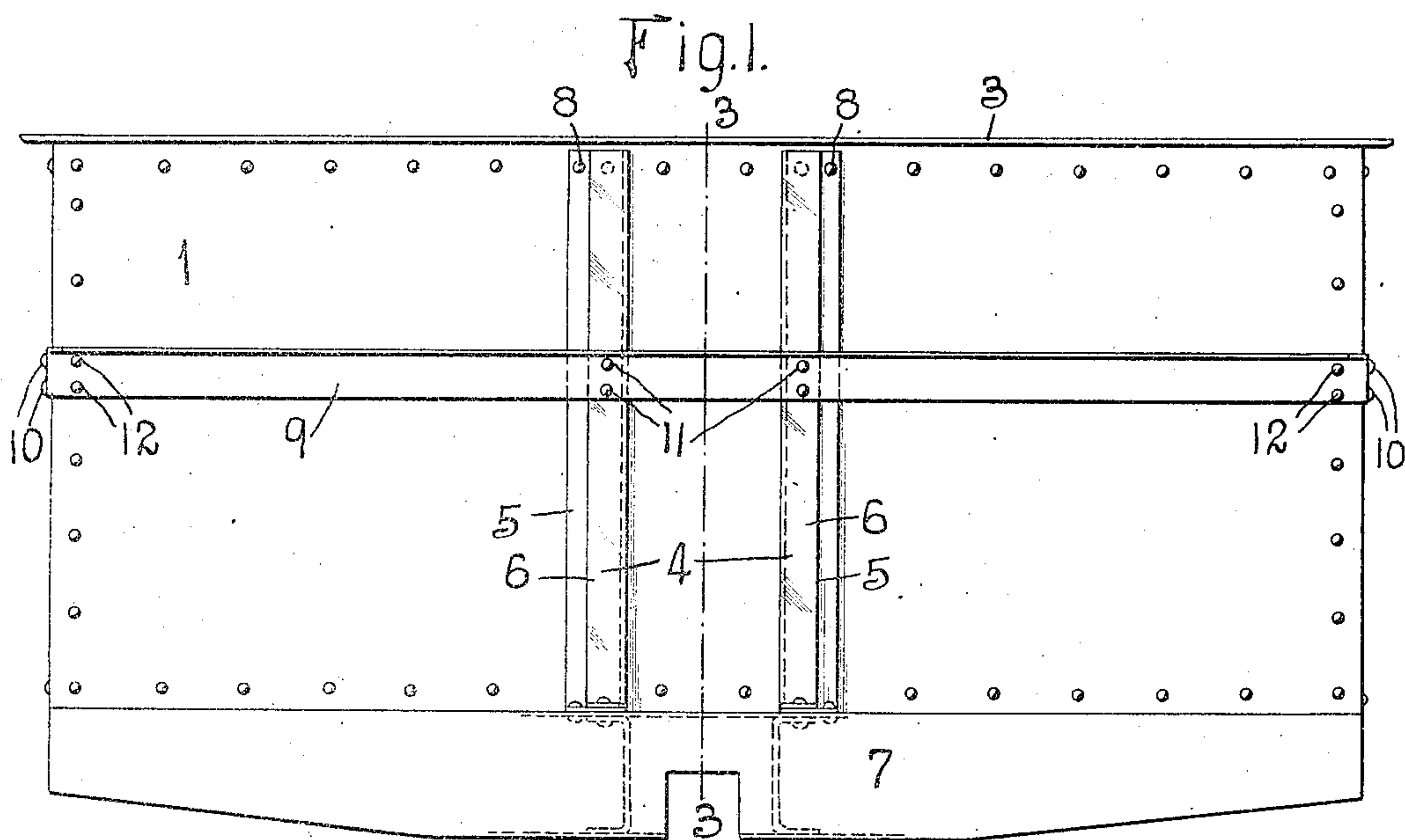


Fig. 3.

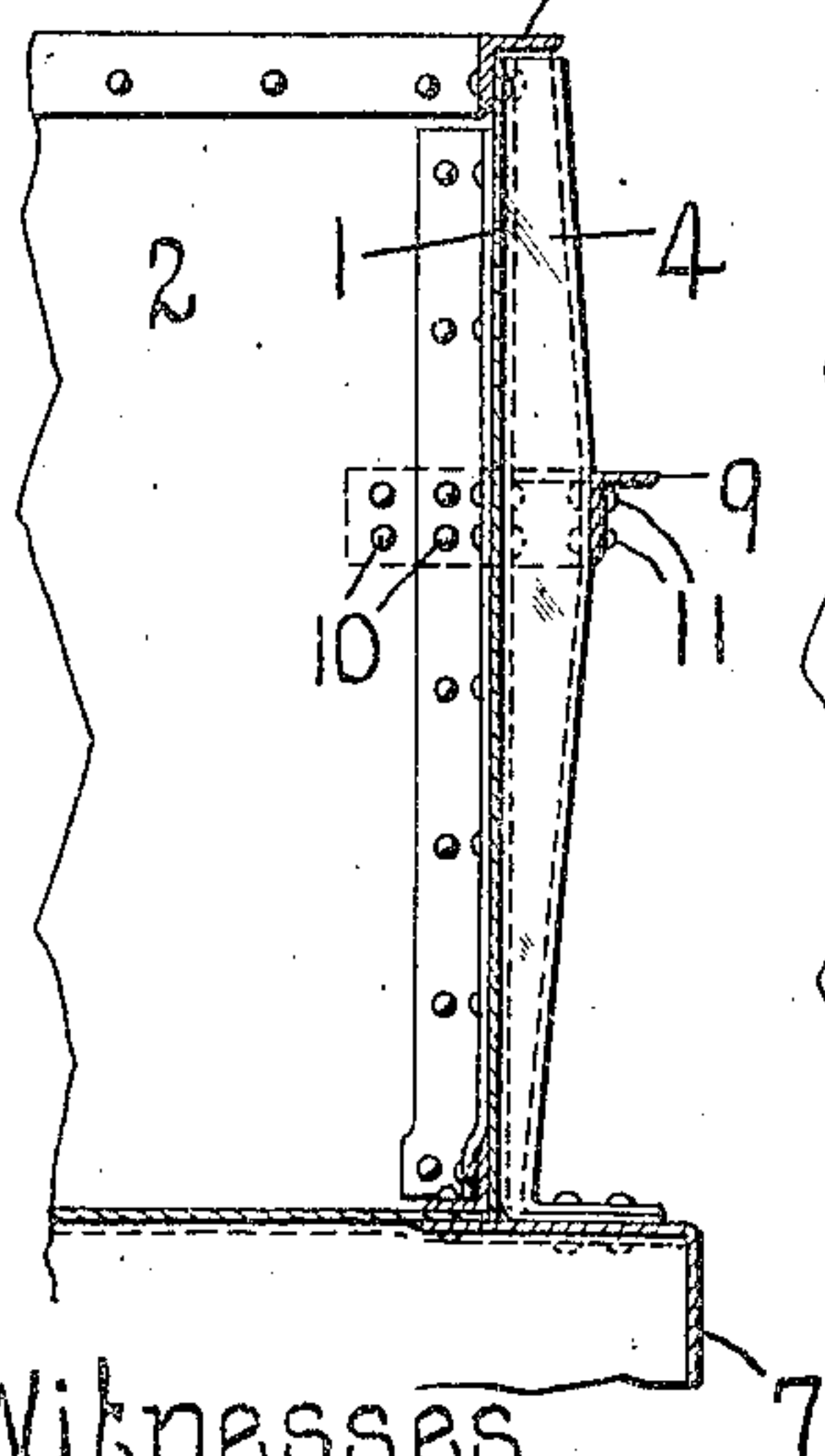


Fig. 4.

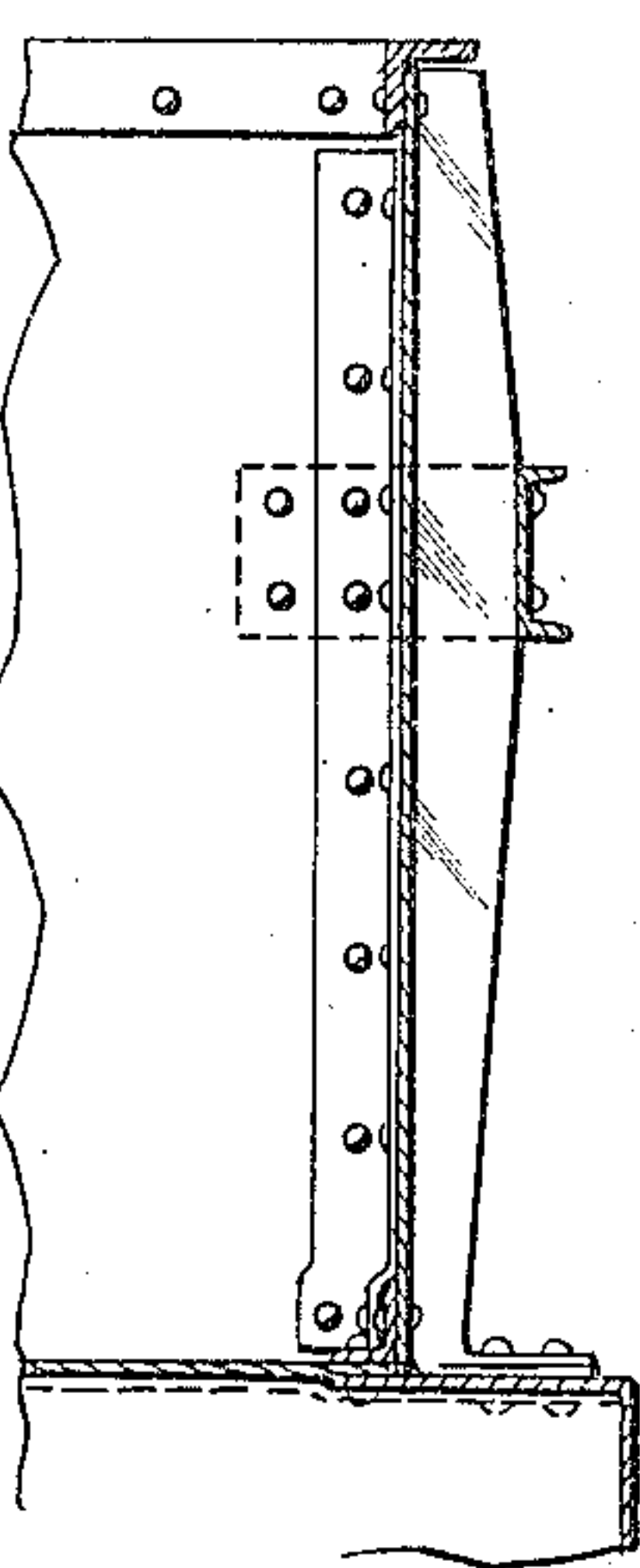


Fig. 5.

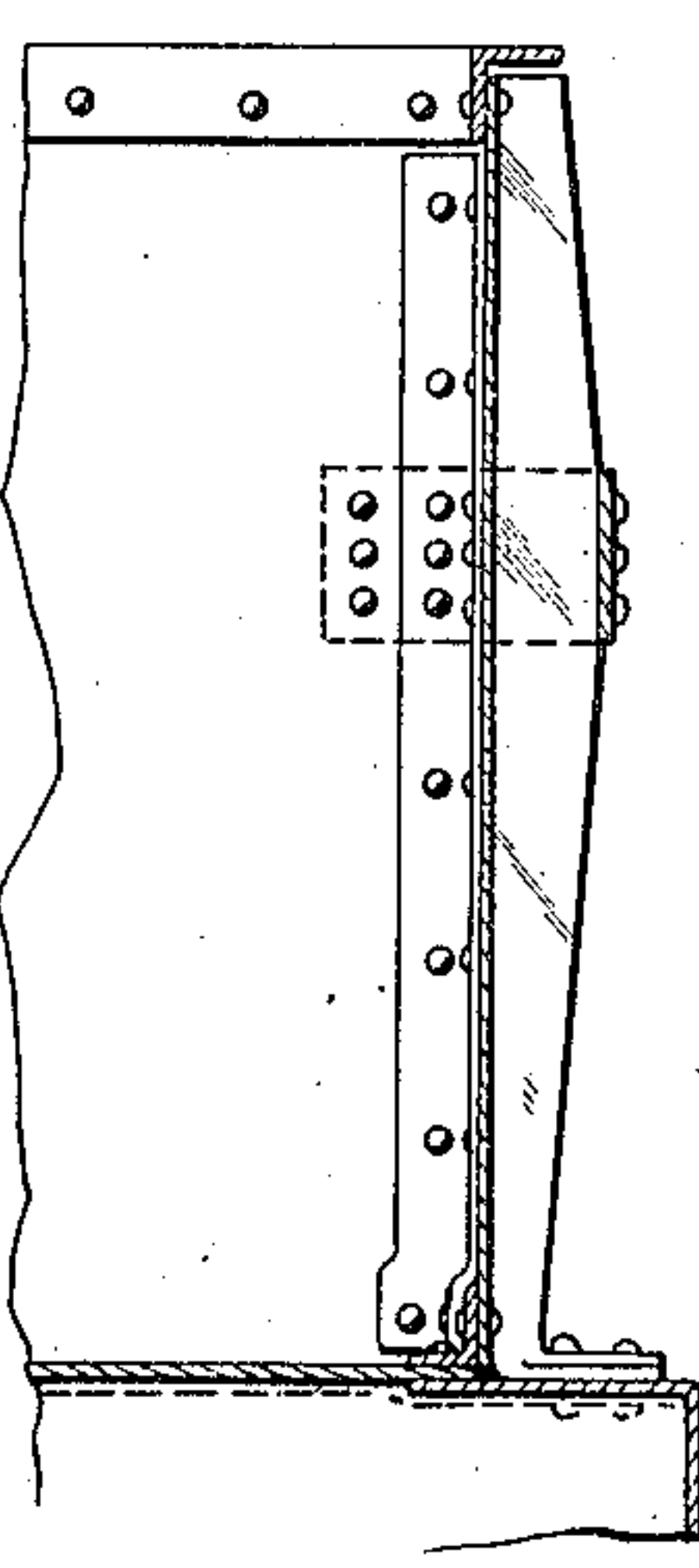
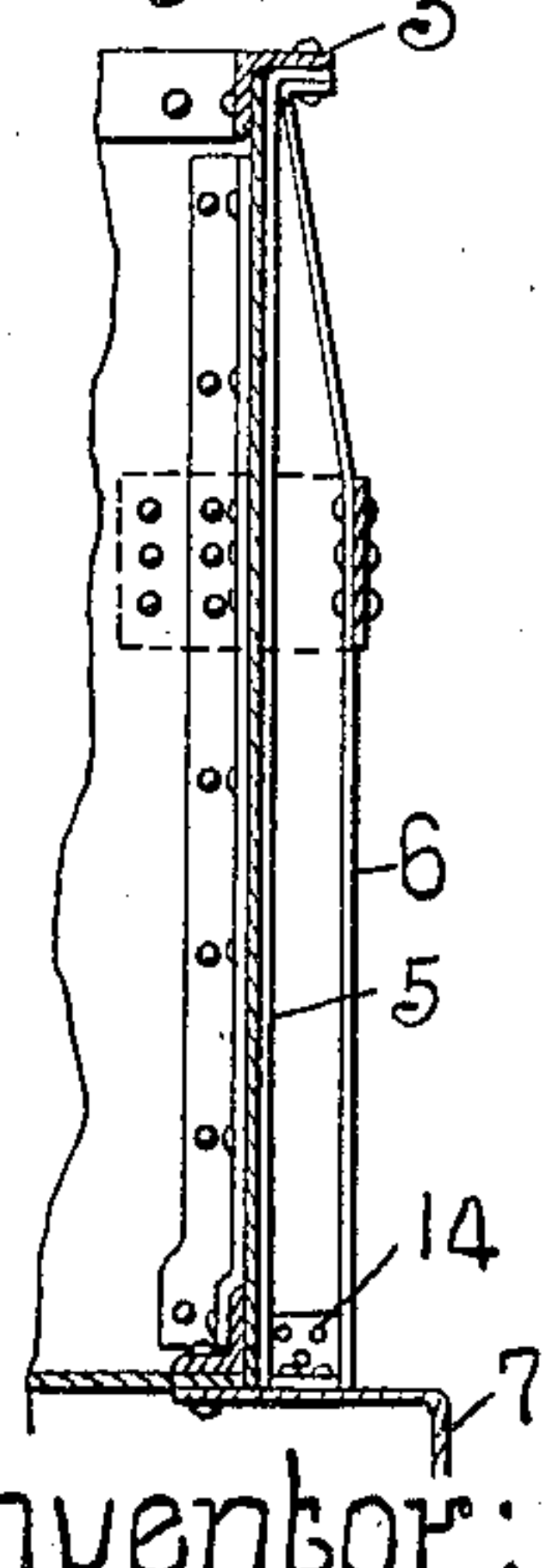


Fig. 6.



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UNITED STATES PATENT OFFICE.

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END BRACING FOR CARS.

No. 827,489.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed May 12, 1906. Serial No. 316,501.

To all whom it may concern:

Be it known that I, HERBERT W. WOLFF, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in End Bracings for Cars, 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 an elevation of the end of a car provided with my improved end brace. Fig. 2 is a horizontal sectional view taken on a line above the transversely-extending brace. Fig. 3 is a vertical sectional view on the line 3-3 of Fig. 1. Fig. 4 is a view similar to Fig. 3, showing a modified form of my invention. Fig. 5 is a view similar to Fig. 3 of still another form of my invention, and Fig. 6 shows a modified form of end stake.

This invention relates to the construction of cars, and particularly to that type known as "gondola" cars.

The object of my invention is to provide a car having end walls which will not bulge outwardly when they are subjected to great strain; and to this end my invention consists in a novel end-wall brace which securely ties the side walls of the car to the end walls and imparts great rigidity to said end wall.

Referring to the drawings, which represent the preferred form of my invention, 1 and 2 designate, respectively, the end wall and the side walls of a gondola car, said walls being provided at their upper edges with angles 3, such as cars of this type are usually provided with. Located near the center of the end wall are two vertically-extending stakes 4, each of which is substantially channel-shaped throughout its length, the inner leg 5 of the channel lying against the end wall of the car and the outer leg 6 of the channel converging from the center of the stake toward the inner leg, so as to contact with the same at the lower end of the stake, said legs at the point where they contact with each other being bent outwardly and connected to the end sill 7 of the car. As shown in the drawings, the legs of the channel are of unequal length, and the web of the channel is of greatest width at the central portion of the stake, the outer leg also converging toward the inner leg toward the upper end of the stake, but not con-

tacting with the same. Preferably the inner legs of the channels are connected to the end wall of the car by rivets 8.

Extending transversely across the end of the car is a brace 9, which in the preferred form of my invention, as shown in Figs. 1, 2, and 3, consists of an angle, said brace being bent around the side walls of the car and connected thereto by rivets 10, the vertical leg of the angle being connected to the outer leg of the channel-shaped stake by rivets 11, and preferably to the end wall by rivets 12.

From the foregoing description it will be seen that I have provided an end-wall brace consisting practically of a truss that absolutely prevents the end wall of the car from bulging and also securely ties said wall to the side walls of the car, the end wall of the car acting as the compression member, the brace 9 as the tension member, and the end stakes as the struts.

In Figs. 4 and 5 I have shown modified forms of my invention in which the transversely-extending brace is shown, respectively, as a channel and as a flat plate, and in Fig. 6 I have shown a modified form of end stake. This stake is also of channel form; but the outer leg 6 of the channel converges toward the inner leg 5 and contacts with the same at the upper end of the stake, the contacting portions of said legs being bent outwardly and connected by rivets to the angle 3 at the upper edge of the end wall of the car. The lower end of said stake is fastened to the end sill 7 of the car by an angular bracket 14.

While I have herein shown the end wall of the car as being provided with an angle 3 at its upper edge, it will of course be understood that the upper edge of said wall could be provided with an integral flange without departing from the scope of my invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. An end truss for cars consisting of a tension-brace extending across the end of the car, and a strut cooperating with said brace, said strut consisting of a channel-shaped member which is of greatest dimensions at its central portion; substantially as described.

2. An end truss for cars consisting of a tension-brace extending across the end of the car, and a strut cooperating with said brace, said strut consisting of a channel-shaped

member which diminishes in width from its center toward its opposite ends; substantially as described.

3. An end truss for cars comprising a tension-brace extending across the end of the car, and a strut comprising a vertically-disposed channel having its legs or flanges converging at its lower end and bent at an angle to the body portion thereof; substantially as described.

4. An end truss for cars comprising a tension-brace extending across the end of the car, and a strut comprising a vertically-disposed channel having its lower end bent outwardly and connected to the end sill of the car; substantially as described.

5. Means for bracing the end of a car comprising a channel-shaped end stake having its lower end bent at an angle to the body portion thereof, fastening devices passing through the bent portion of said stake, and a transversely-extending brace connected adjacent to its ends to the end wall of the car; substantially as described.

6. Means for bracing the end of a car comprising a channel-shaped end stake having its lower end bent at an angle to the body portion thereof, fastening devices passing through the bent portion of said stake, and a transversely-extending brace connected to the side walls of the car; substantially as described.

7. Means for bracing the end of a car comprising a channel-shaped end stake having its lower end bent at an angle to the body portion thereof, fastening devices passing through the bent portion of said stake, and a transversely-extending brace connected to the side and end walls of the car and to said stake; substantially as described.

8. A truss for bracing the end wall of a car consisting of a tension member and a strut comprising an end stake of substantially channel shape having its legs of unequal length, the web portion of said channel diminishing in width from the central portion of the stake toward its lower end, and the legs of the channel at the lower end of the stake contacting with each other and being bent at an angle to the body portion of the stake; substantially as described.

9. A car comprising an end wall, an end sill, an end stake of substantially channel shape having one of its legs lying against said end wall, the lower end of said stake being

bent at an angle to the body portion thereof and connected to the end sill, and a brace extending from side to side of the car and engaging the outer face of said stake; substantially as described.

10. A car comprising an end wall, an end sill, an end stake of substantially channel shape having one of its legs lying against said end wall, the lower end of said stake being bent at an angle to the body portion thereof and connected to the end sill, and a transversely-extending brace connected to the side walls of the car and to the outer face of said stake; substantially as described.

11. A car provided with side walls, an end wall and an end sill, a plurality of end stakes having their lower ends bent at an angle to the body portions thereof and connected to the end sill, and a transversely-extending brace comprising an angle which is connected to the side walls of the car and to said end stakes; substantially as described.

12. Means for bracing the end wall of a car comprising a substantially channel-shaped end stake in which the legs contact with each other at the lower end of the stake and are bent at an angle to the body portion of the stake, and a transversely-extending brace engaging the outer face of said stake and being connected at its opposite ends to portions of the car; substantially as described.

13. An end truss for cars comprising a tension-brace extending across the end of the car, and a strut comprising a vertically-disposed channel having its legs or flanges converging at one end of the strut and bent at an angle to the body portion of the strut; substantially as described.

14. An end truss for cars comprising a tension-brace extending across the end of the car, a strut comprising a vertically-disposed channel having its legs or flanges converging at one end of the strut and bent at an angle to the body portion of the strut, and fastening devices connecting said bent portion of the strut to a part of the car; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 10th day of May, 1906.

HERBERT W. WOLFF.

Witnesses:

WELLS L. CHURCH,
GEORGE BAKEWELL.