No. 710,175. Patented Sept. 30, 1902.

A. B. BELLOWS.

GONDOLA CAR.

Application filed Dec. 21, 1901

(No Model.)

Fig. 1.

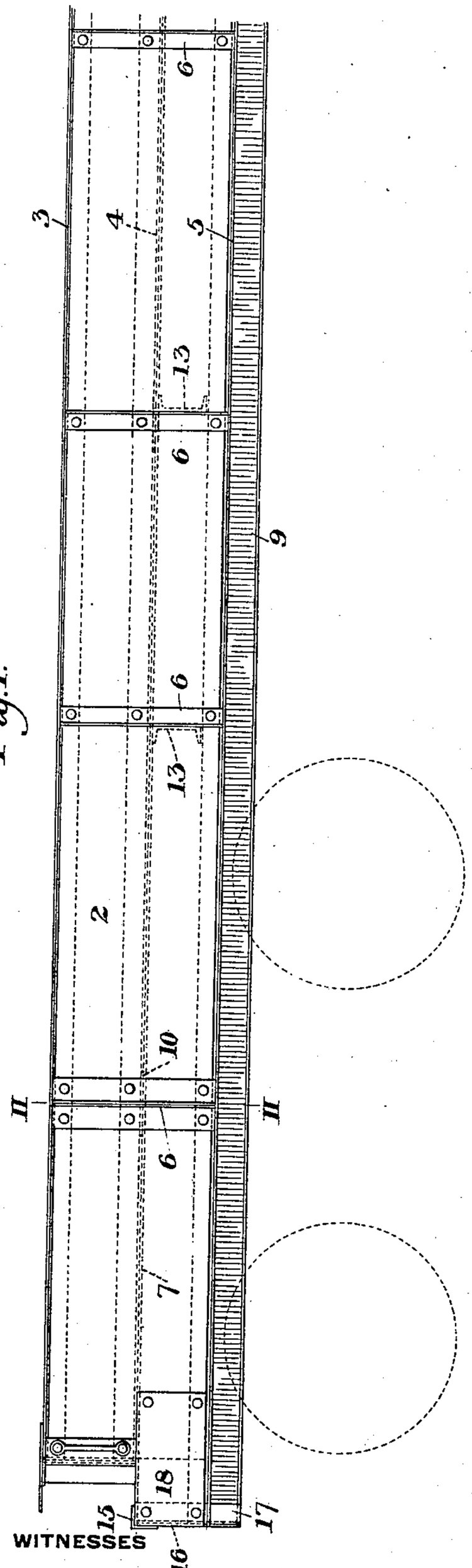


Fig. 3.

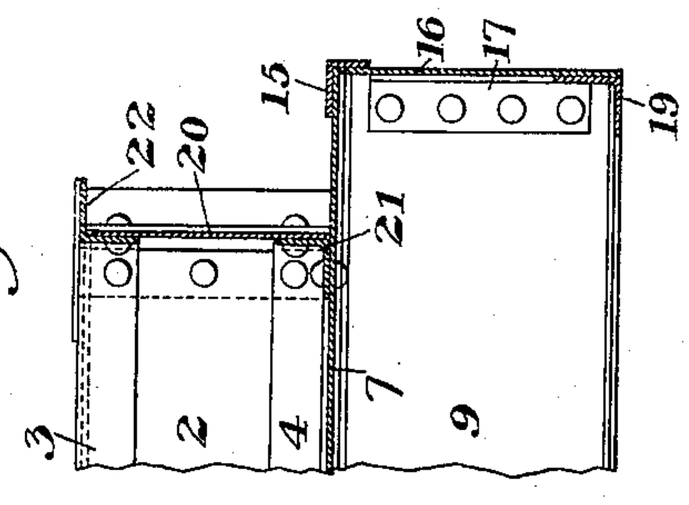


Fig. 5.

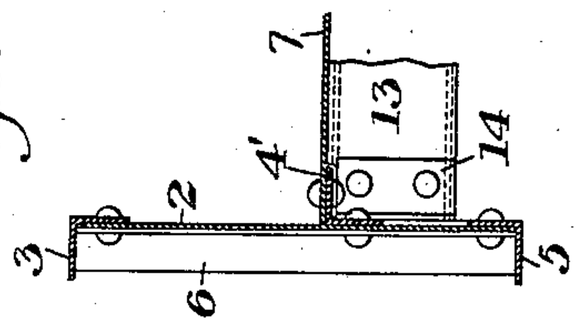


Fig. 4.

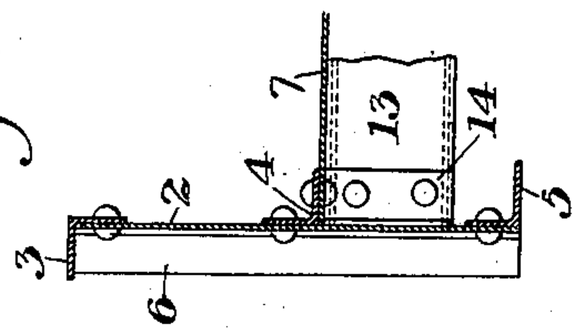
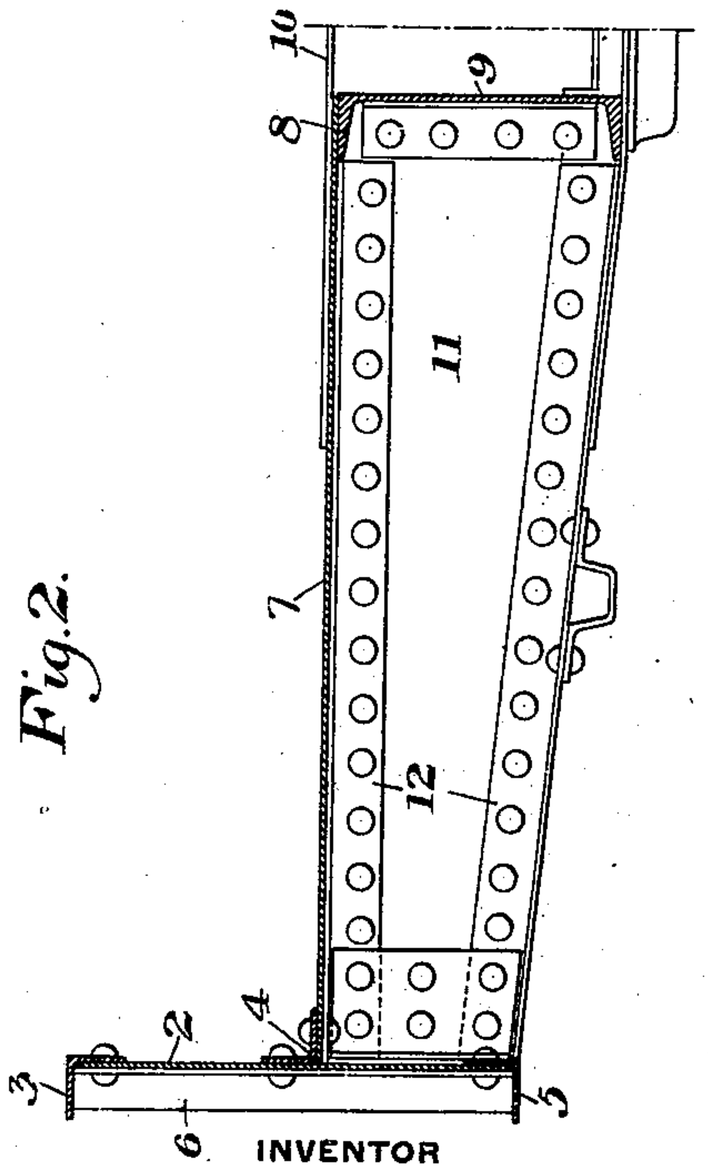


Fig. 2.



WITNESSES

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ARTHUR B. BELLOWS, OF PITTSBURG, PENNSYLVANIA.

GONDOLA CAR.

SPECIFICATION forming part of Letters Patent No. 710,175, dated September 30, 1902.

Application filed December 21, 1901. Serial No. 86,783. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR B. BELLOWS, of Pittsburg, Allegheny county, Pennsylvania, have invented a new and useful Gondola Car, 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 showing a portion of a gondola-car body constructed in accordance with my invention. Fig. 2 is a partial transverse vertical section on the line II II of Fig. 1. Fig. 3 is a sectional view longitudinally of the end of the car; and Figs. 4 and 5 are views similar to Fig. 3, showing modified constructions.

My invention relates to the class of gondola cars, and is designed to provide an improved construction of the body and substructure of such cars and provide a steel car of this character which can be built up from commercial shapes and sheets.

In the drawings, 2 represents the side of the car-body, which I have shown as provided with a top angle 3, an intermediate inwardly-projecting angle 4, and a bottom outwardly-projecting angle 5. I have shown the parts 3, 4, and 5 as consisting of commercial angles, which are riveted to the plate or plates forming the car side; but it is evident that any one or more of these angles may consist of an integral flange bent up from the side, and by the term "angular flange" in the broader claims I intend to cover this construction, whether the flange is integral with the car side or is formed separately therefrom and secured to it. In the form of Figs. 1, 2, and 3 the horizontal flanges of the top and bottom angles project outwardly, their inner flanges being secured to the inner face of the plate-girder side, while the intermediate angle has its vertical flange riveted to the inner face of the side, its horizontal flange projecting inwardly. To strengthen the side into plate-girder form and do away with the necessity for side sills, I provide the vertical strengthening members 6, which consist of angles riveted to the outer face of the car side, the rivets or a part of them preferably passing through the vertical flanges of the horizontal angles 3, 4, and 5. At the points over the bolsters I preferably provide two of the strengthening-angles at each side, which are riveted to the sides, with their outwardly-projecting flanges fitting against each other, as shown in Fig. 1. The floor-plates 7 are riveted to the under faces of the horizontal flanges of the intermediate angles 4 and also to the upper flanges 8 of the channels 9, two of which form the center sill. To tie together the flying transoms of the bolsters on the opposite sides of the longitudinal axis of the car and strengthen the structure, I preferably provide over the bolsters narrow cover-plates 10, which are of considerably greater length than the width of the center sill and are secured at their ends to the floor-plates and transoms on both sides. I have shown the bolster as in the form of a built-up structure with a web-plate 11 and angles 12, and this bolster is preferably riveted to the floor-plate, the car sides, and the intermediate and bottom angles of the sides. Between the bolster-points the car is provided with cross-sills 13, shown as formed of channels, the upper flanges of which are secured to the floor-plates and the intermediate angle 4, the ends being secured to the lower parts of the sides by bent plates or angles 14. At each end of the car the floor-plates extend beyond the end of the car-body and are provided with a cover-angle 15, the depending vertical flange of which is secured to an end plate 16, which in turn is secured by corner plates or angles 17 to plates 18, secured to the car sides and also to the center sill. A lower inner angle 19 is secured to the end plate in horizontal position, as shown in Fig. 3. The end plate 20 of the car-body above the floor is secured to the floor-plates by angle 21 and is provided with a cover-angle 22, having an outwardly-projecting upper flange, the inner flange being riveted to the inner end of the end plate 20.

In the form of Fig. 4 the construction is similar to that of Figs. 1, 2, and 3, except that the horizontal flange of the lower angle 5 projects inwardly instead of outwardly. In the form of Fig. 5 the construction is likewise similar to that of Figs. 1, 2, and 3, except that the intermediate angle 4′ is beneath the floor-plates instead of above them, as in the first form shown.

The advantages of my invention result from

the use of the three angular flanges, whether integral with or secured to the sides, the floor being secured to the intermediate angle, also from the end structure and the connections between the cross-sills and the sides and the bolsters and the sides, and, further, from the use of the cover-plates secured to the flying transoms on each side of the center line, the floor-plates extending beyond the ends of the body, and the general arrangements of the parts.

Many variations may be made in the form and arrangements of the parts without departing from my invention.

I claim—

1. A gondola-car side having an upper angular flange, an intermediate angular flange, and a lower angular flange, all said flanges extending longitudinally of the car-body; substantially as described.

2. A gondola-car side having upper, lower and intermediate angular flanges, and a floor secured to the intermediate flange; substantially as described.

3. A gondola-car side having a cover-angle riveted along its top with one flange inside the side plate of the car, a similar angle secured along the lower edge of the car side, and an intermediate longitudinal angle riveted along the car side intermediate of its height; substantially as described.

4. A gondola-car side having rolled angles secured along its top and bottom edges, an intermediate angle secured to the interior of the car side, and a floor secured to said intermediate angle; substantially as described.

5. A gondola-car side having an intermediate longitudinal angular flange, and cross-sills and floor-plates secured to said flange; substantially as described.

6. A gondola-car side having rolled angles secured along its top and bottom edges with their vertical flanges on the inner side of the side plates; substantially as described.

7. A steel gondola car having a load-inclosing superstructure, said car having a floor-plate partly within the load-inclosing structure and forming a part of the load-carrying floor, said plate extending to the end of the car beyond the superstructure, and a depending end plate secured to the end of said floor-plate by a flanged member attached to both; substantially as described.

8. A steel gondola car having a load-inclosing superstructure, said car having a floor-plate partly within the load-inclosing structure, and forming a part of the load-carrying floor, said floor-plate extending beyond the load-inclosing structure to the end of the car, a depending end plate secured to the end of said floor-plate by a flanged shape, and a flanged shape secured to the lower end of the said depending plate; substantially as described.

9. A steel gondola car having a floor-plate secured to the end of the car-body and extending beyond it and a depending end plate secured to the end of the floor-plate and having upper and lower angles secured thereto to form an end sill; substantially as described.

10. A steel car having a cover-plate extending transversely over the floor-plates above the bolster and secured to the flying transoms of the bolster on both sides of the center sill; substantially as described.

11. A steel gondola car having a floor-plate extending to the end of the car beyond the superstructure, and a depending end plate secured to the end of said floor-plate by an outer inclosing flanged shape to form a portion of the end sill; substantially as described.

12. A gondola-car side having a flanged shape riveted along its top and arranged to cover the edge of the side, said side having an intermediate angular flange, and a lower angular flange, all of said flanges extending longitudinally of the car-body; substantially as described.

In testimony whereof I have hereunto set my hand.

ARTHUR B. BELLOWS.

Witnesses:
H. M. CORWIN,
G. B. BLEMING.