P. H. TRUMAN AND V. E. SISSON.

SHEET STEEL END STRUCTURE FOR RAILWAY CARS.

APPLICATION FILED JAN. 2, 1919.

1,432,928. Patented Oct. 24, 1922.

3 SHEETS—SHEET 1.

Fig. 1.

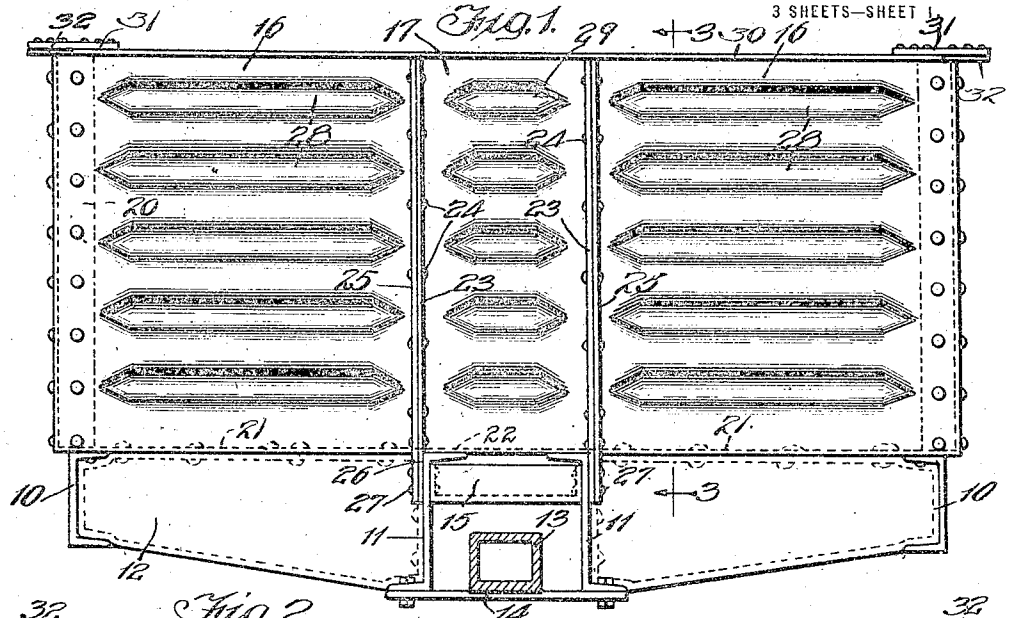


Fig. 2.

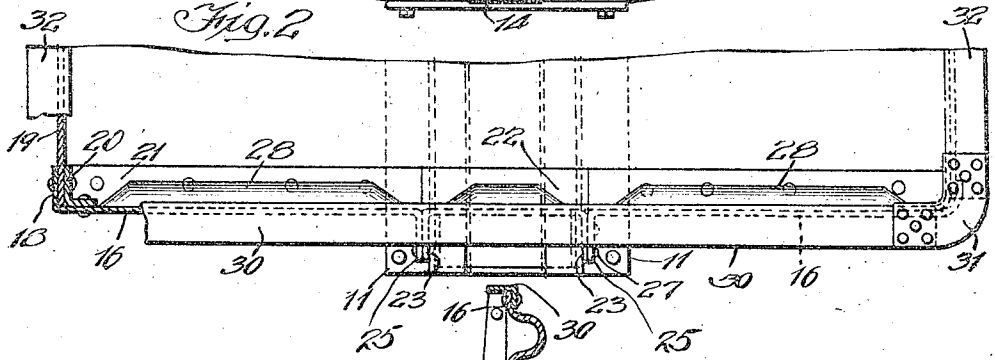
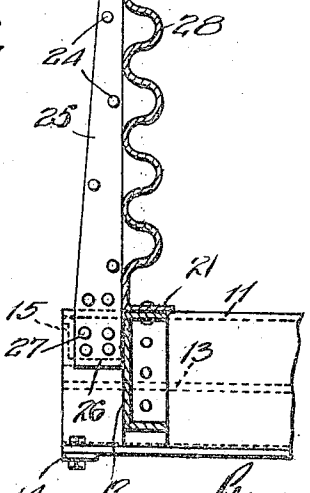


Fig. 3.



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3 SHEETS—SHEET 2.

Fig. 4.

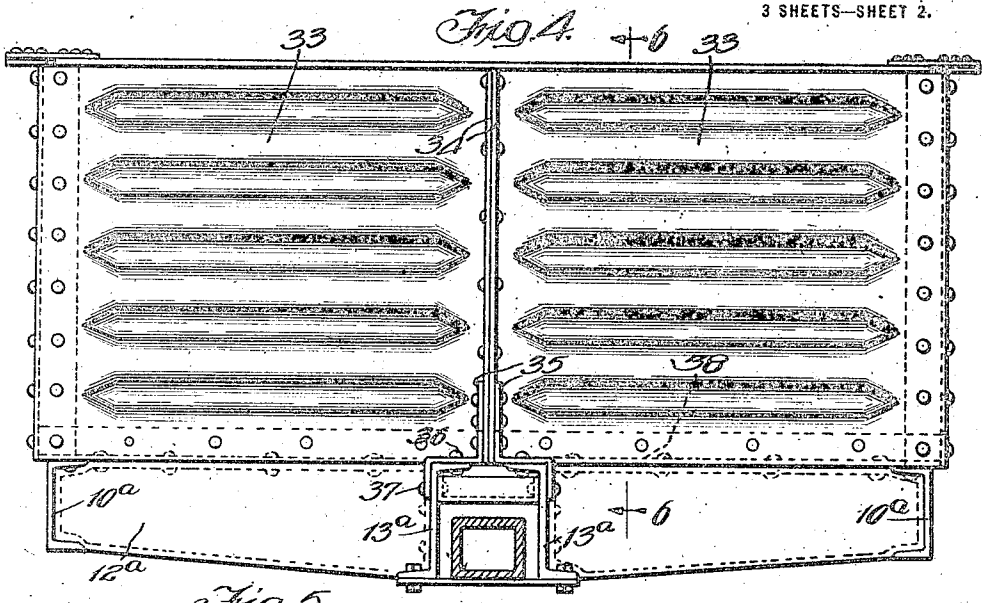


Fig. 5.

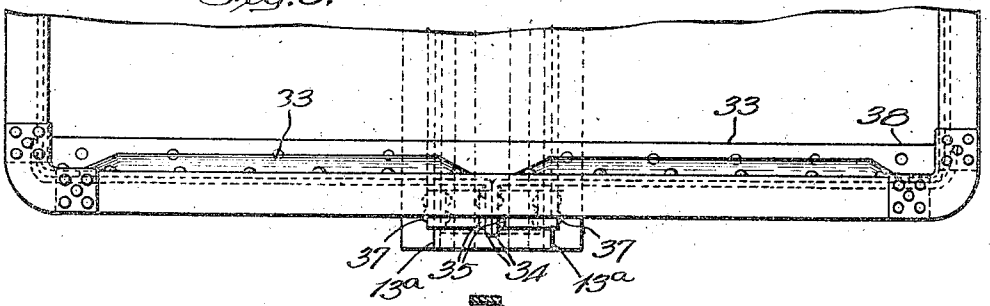
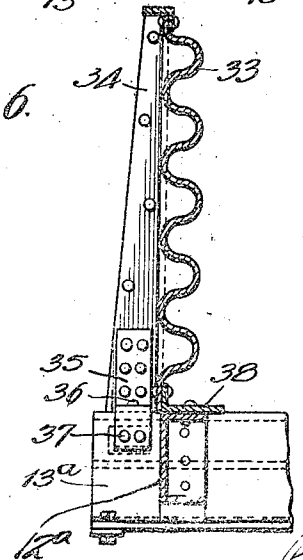


Fig. 6.



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3 SHEETS—SHEET 3.

Fig. 7.

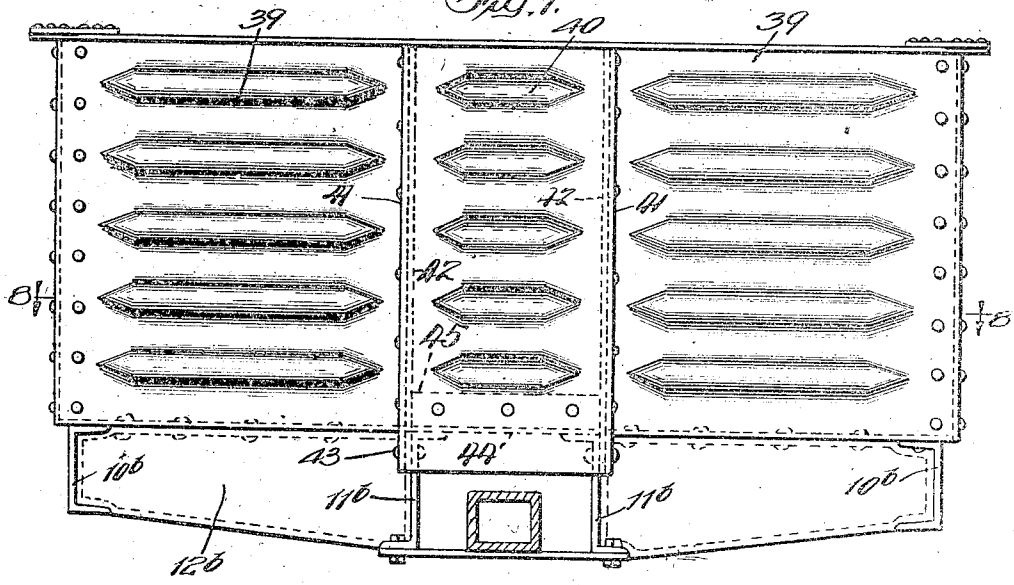


Fig. 8.

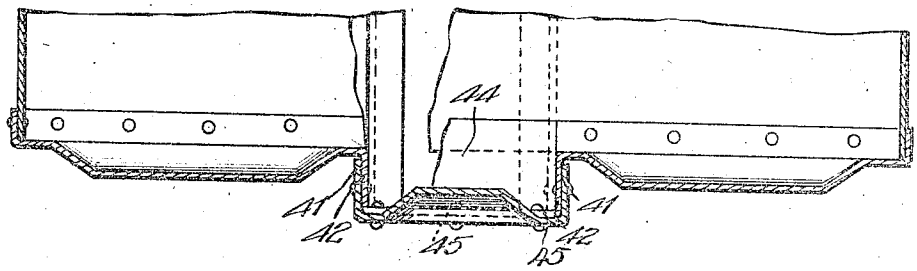
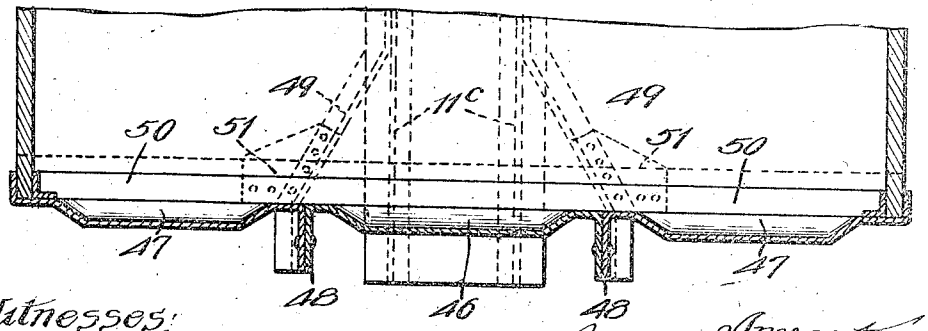


Fig. 9.



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UNITED STATES PATENT OFFICE.

PERCIVAL H. TRUMAN, OF EVANSTON, AND VINTON E. SISSON, OF CHICAGO, ILLINOIS, ASSIGNORS TO WALTER P. MURPHY, OF NEW YORK, N. Y.

SHEET-STEEL END STRUCTURE FOR RAILWAY CARS.

Application filed January 2, 1919. Serial No. 269,312.

To all whom it may concern:

Be it known that we, PERCIVAL H. TRUMAN and VINTON E. SISSON, citizens of the United States, residing at Evanston and Chicago, respectively, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sheet-Steel End Structures for Railway Cars, of which the following is a specification.

Our invention relates to railway car construction, and more particularly to the construction of gondola cars; and a primary object of the invention is to provide an end wall structure for a railway car, more especially a railway car of the gondola type, which will be extremely strong and rigid, as well as firmly united to the under frame and side walls of the car so that it will be able to withstand the heavy stresses to which the end structure of a car of this type is subjected under service conditions due to pressure of bulk cargo and the tendency of piece cargo when the car is loaded with heavy articles to shift and be thrust against the end of the car by inertia when the train starts and stops.

The invention consists in the new and improved constructions, arrangements and devices to be hereinafter described and claimed for carrying out the above stated object and such other objects as will appear from the following description of certain preferred embodiments of the invention illustrated in the drawings annexed hereto.

In the drawings,

Fig. 1 is an end elevation of the superstructure of a gondola car of steel construction employing the features of our invention.

Fig. 2 is a fragmentary plan view of the car with the top chord members broken away at one corner to show the means for connecting the end and side sheets.

Fig. 3 is a vertical section on line 3—3 of Fig. 1.

Figs. 4, 5 and 6 are views corresponding to Figs. 1, 2 and 3, respectively, but showing a modified construction employing two end sheets instead of three.

Fig. 7 is a view similar to Figs. 1 and 4 showing a further modification.

Fig. 8 is a sectional view on line 8—8 of Fig. 7, with certain parts broken away to illustrate the attachment of the end sheet flanges to the draft sills of the car, and

Fig. 9 is a view corresponding to Fig. 8 showing another modification.

Like characters of reference designate like parts in the several figures of the drawings.

Referring first to Figs. 1, 2 and 3, the underframe of the car is shown as of common construction, the under frame comprising side sills 10, draft sills 11 and an end sill 12. The coupler draw bar is indicated in section at 13. 14 is a carry iron for the draw bar and 15 a strut connecting the upper portions of the draft sills 11.

The end wall of the car consists of a sheet steel panel composed of end sheets 16, 16 at the sides of the car and an intermediate sheet 17. Each of the sheets 16 is formed, preferably at its outer edge, with a flange 18 riveted to the adjacent side wall sheet 19, the corner connection being reinforced by an upright angle bar 20. Sheet 16 is formed with a flange 21 at its lower edge which is inturned and riveted to the end sill 12. The intermediate sheet 17 has a flange 22 at its lower edge secured to the end sill of the car. Along its vertical edges it is formed with outwardly projecting flanges 23 which are riveted at 24 to outwardly projecting flanges 25 formed on the sheets 16. Each pair of these flanges constitutes, in effect, an end stake, the lower end 26 of which projects down below the top of the adjacent draft sill and preferably lies flatwise against the sill and is secured to the same by rivets 27. The end sheets 16 are preferably formed with horizontal corrugations 28 and the intermediate sheet 17 may also be corrugated, as indicated at 29, although this is less important due to the comparatively narrow width of this sheet. Any suitable top chords are provided for the end and side walls of the car. We have shown an angle bar 30 secured to the upper edge of the sheets 16, 16 and 17, the angle bar being connected by corner gussets 31 with the side wall top chords 32.

In the construction shown in Figs. 4, 5 and

6 there are only two end sheets, designated 33, 33, the meeting flanges 34, 34 of which are riveted together at the vertical center line of the end. The end stake thus formed extends only to the plane of the upper surfaces of the side sills 10^a, draft sills 13^a, and end sill 12^a, and attaching members 35 Z-shaped in cross section are employed for securing the stake to the draft sills, the attachments of these members to the draft sills being indicated at 36, 37. An angle bar 38 is employed for securing the lower edge of the sheets 33 to the longitudinal sills of the car.

In Figs. 7 and 8 another modified construction is shown, employing three end sheets, as in the form of the invention shown in Figs. 1 to 3, the sheets at the side being designated 39 and the intermediate sheet 40. The latter has inturned flanges 41 which overlap the outturned flanges 42 of sheets 39. The flanges 41, 42 project below the tops of the draft sills 11^b and are riveted thereto as indicated at 43. The intermediate sheet extends part way down over the ends of the draft sills, the space between the draft sills being covered by an angle plate 44, the upstanding leg 45 of which is riveted to the face of the intermediate sheet.

In Fig. 9 is shown a further modification, the purpose of which is to permit the use of an intermediate sheet 46 of the same width as the side sheets 47. The stakes 48, 48 formed by the outstanding flanges at the meeting edges of the sheets extend below the plane of the upper surfaces of the sills and their lower extremities are secured to the draft sills 11^c by means of bent angle braces 49, the latter being preferably attached to the flanges 50 at the lower edges of sheets 47 by means of gusset plates 51.

We claim:

1. In a railway car, the combination with the side walls and longitudinal sills of the car, of a sheet steel end wall panel comprising a plurality of end sheets joined together on substantially vertical lines and provided with angularly disposed flanges along their meeting edges which together constitute, in each case, an end stake, and means for attaching the stake to one of the longitudinal sills of the car.

2. In a railway car, the combination with the side walls and longitudinal sills of the car, of a sheet steel end wall panel comprising a plurality of end sheets joined together on substantially vertical lines and provided with angularly disposed flanges along their meeting edges which together constitute, in each case, an outwardly projecting end stake, and means for attaching the stake to one of the longitudinal sills of the car.

3. In a railway car, the combination with the side walls and longitudinal sills of the car, of a sheet steel end wall panel comprising a plurality of end sheets joined together on substantially vertical lines formed with substantially horizontal corrugations and provided along their meeting edges with angularly disposed flanges which together constitute, in each case, an end stake, and means for attaching the stake to one of the longitudinal sills of the car.

4. In a railway car, the combination with the side walls and longitudinal sills of the car, of a sheet steel end wall panel comprising a plurality of end sheets joined together on substantially vertical lines and formed with integral flanges along their meeting edges which together constitute, in each case, an end stake, and means for attaching the stake to one of the longitudinal sills of the car.

5. In a railway car, the combination with the side walls and longitudinal sills of the car, of a sheet steel end wall panel comprising a plurality of end sheets joined together on substantially vertical lines and formed with integral outturned flanges along their meeting edges which together constitute, in each case, an end stake, and means for attaching the stake to one of the longitudinal sills of the car.

6. In a railway car, the combination with the side walls and longitudinal sills of the car, of a sheet steel end wall panel comprising a plurality of end sheets joined together on substantially vertical lines and formed with substantially horizontal corrugations and formed with integral flanges along their meeting edges which together constitute, in each case, an end stake, and means for attaching the stake to one of the longitudinal sills of the car.

7. In a railway car, the combination with the side walls and draft sills of the car, of a sheet steel end panel comprising two end sheets formed with outwardly projecting flanges at their vertical meeting edges along a line at the center of the car end, and attaching members Z-shaped in cross section secured to said flanges and to the draft sills.

8. In a gondola car, the combination with the draft sills of the car, of a pair of metal end sheets joined together at substantially the vertical center line of the end and formed at their meeting edges with angularly projecting flanges constituting an end stake, and a pair of anchoring members secured to opposite sides of said stake and overlapped and secured to the sides of the draft sills.

9. In a gondola car, the combination with the draft sills and end sill of the car, of a pair of metal end sheets joined together at substantially the vertical center line of the end and formed at their meeting edges with angularly projecting flanges constituting an end stake, a pair of Z-shaped anchoring members secured to opposite sides of said stake and overlapped and secured to the sides

of the draft sills, respectively, and an angle bar anchoring the lower edges of the end sheets to said end sill.

10. In a railway car, the combination with the side walls and longitudinal sills of the car, of a sheet steel end wall panel comprising end sheets joined together on substantially vertical lines and provided with angularly disposed flanges along their meeting edges which together constitute, an end stake, said stake being provided with a downwardly extending projection which lies flatwise against one of said longitudinal sills and is secured thereto.

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