J. S. WORTH.

CAR CONSTRUCTION.

APPLICATION FILED DEC. 30, 1915.

1,224,052.

Patented Apr. 24, 1917.

2 SHEETS—SHEET 1.

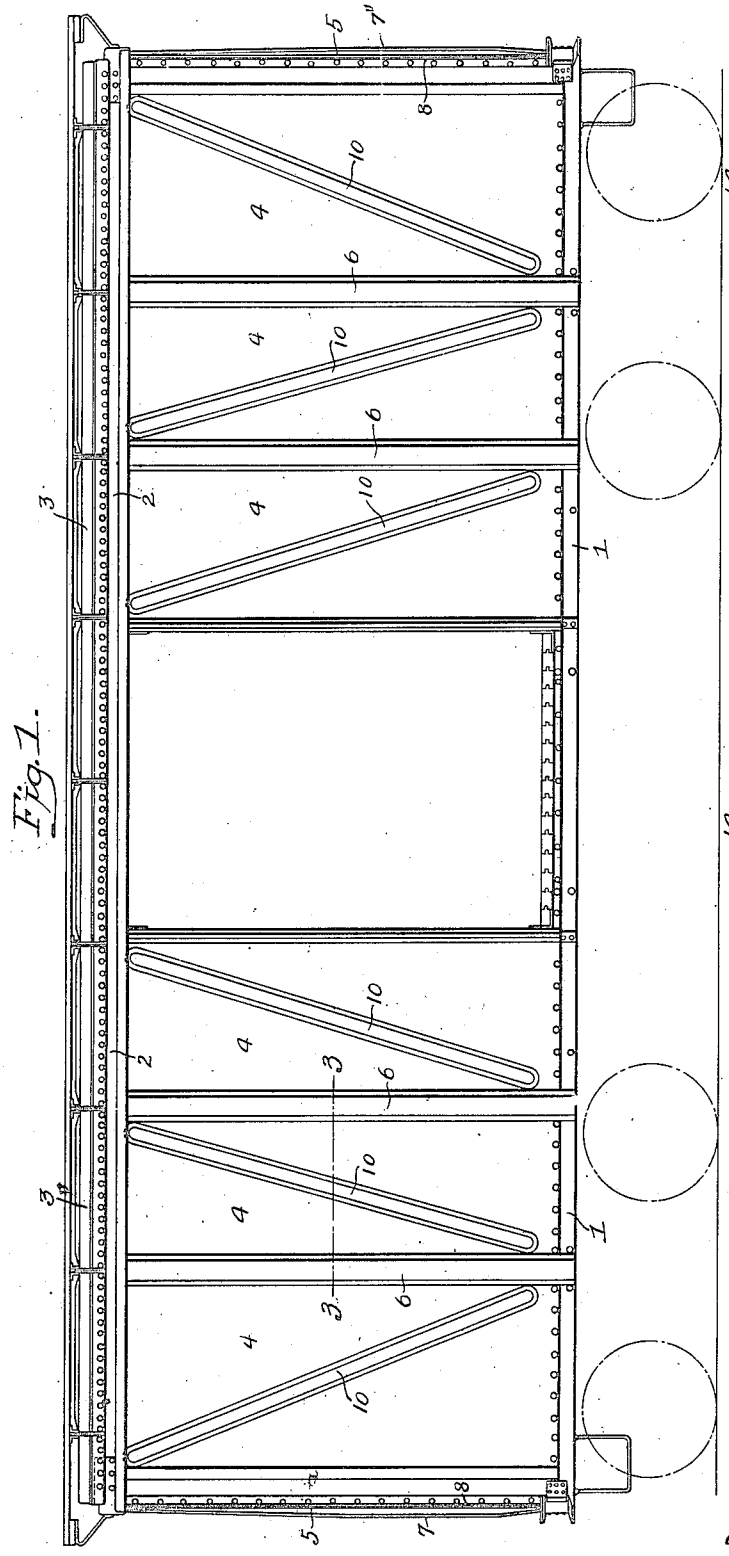


Fig. 1.

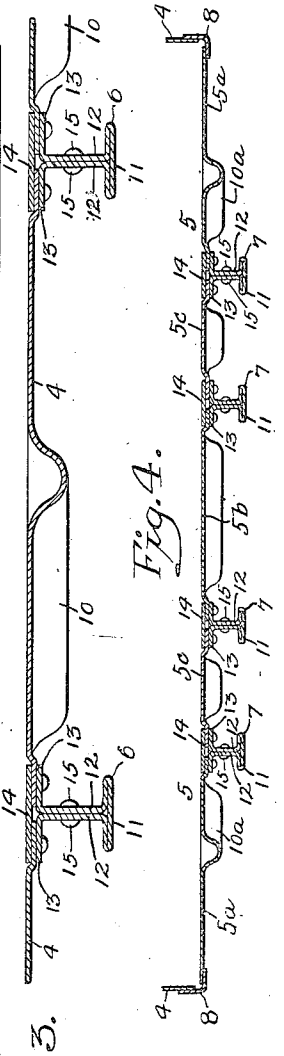


Fig. 3.

Fig. 4.

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2 SHEETS—SHEET 2.

Fig. 2.

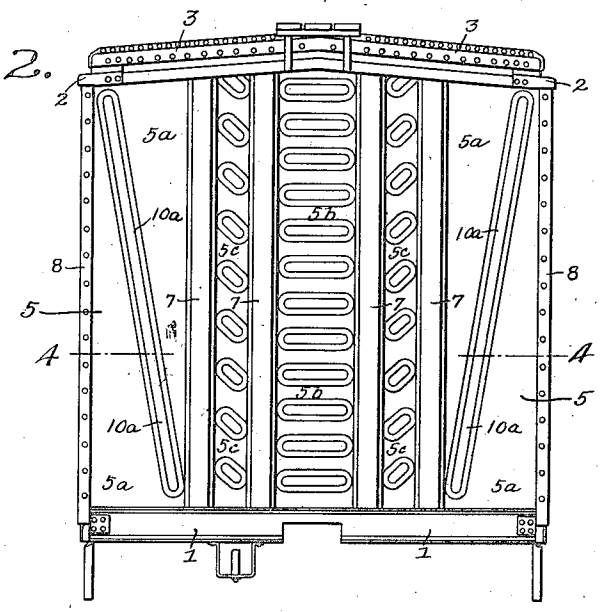


Fig. 5.

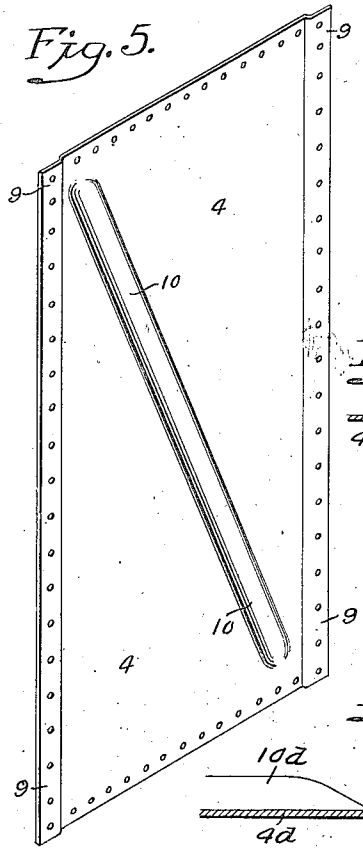


Fig. 6.

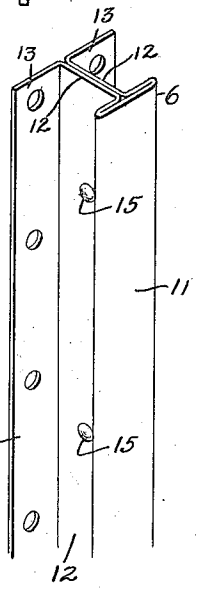


Fig. 7.

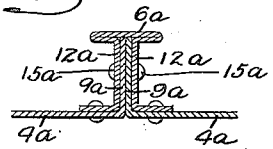


Fig. 8.

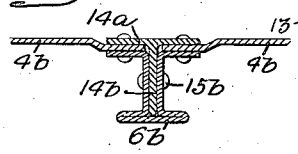


Fig. 9.

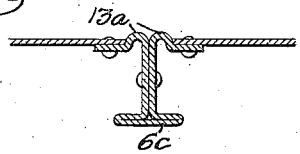
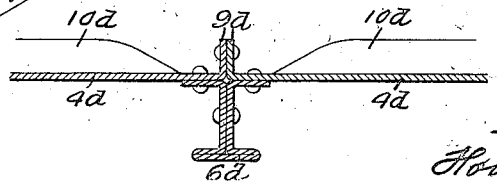


Fig. 10.



Inventor:
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UNITED STATES PATENT OFFICE.

JOHN S. WORTH, OF COATESVILLE, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND WILLIAM P. WORTH, OF COATESVILLE, PENNSYLVANIA.

CAR CONSTRUCTION.

1,224,052. Specification of Letters Patent. Patented Apr. 24, 1917.

Application filed December 30, 1915. Serial No. 69,421.

To all whom it may concern:

Be it known that I, JOHN S. WORTH, a citizen of the United States, and a resident of Coatesville, county of Chester, State of Pennsylvania, have invented certain Improvements in Car Construction, of which the following is a specification.

One object of my invention is to improve the construction of metal freight cars of the "box" type so as to avoid leakage at the joints of the side and end plates and to provide a smooth surface on the inner side of the car body.

A further object of the invention is to improve the construction of the posts which extend from the lower frame to the cornice girder of the car and to make these posts of pressed sheet metal.

A still further object of the invention is to design the plates so that they will have sufficient stiffness to withstand the strains to which they are subjected.

In the accompanying drawings:

Figure 1 is a side view illustrating my improved freight car;

Fig. 2 is an end view;

Fig. 3 is an enlarged sectional view on the line 3—3, Fig. 1, showing the construction of the side panels and the posts of the car;

Fig. 4 is a sectional plan view on the line 4—4, Fig. 2, illustrating the end of the car;

Fig. 5 is a perspective view of one of the side panels or plates;

Fig. 6 is a perspective view of a portion of one of the posts; and

Figs. 7, 8, 9, and 10 are views illustrating modifications of the post construction.

Referring to the drawings, 1 is the base frame of the car. 2 is the cornice frame, which supports the roof structure 3, which may be of any type desired. 4, 4 are the side plates of the car. 5, 5 are the end plates. 6, 6 are the side posts and 7, 7 are the end posts. The side plates and the end plates are connected together in the present instance by angle corner posts 8. Each vertical edge of the plate is pressed out of line with the body of the plate, as shown at 9 in Fig. 5, and, in the present instance, extending diagonally from the upper to the lower corner of each plate is a rib 10 formed by pressing the plate. This rib acts as an angle brace to stiffen the plate and also adds strength to the car structure. Some of the plates have this rib extending in one direction, while others have it extending in the opposite direction, as clearly illustrated in Fig. 1. The several side plates are attached by rivets to the lower frame 1 and the upper cornice frame 2 and the vertical edges of the plates are secured by rivets to the posts.

The posts 6 are preferably made in the form of a flanged T, as shown in Fig. 6, forming a head 11 from which project two web sections 12 arranged side by side and extending laterally from each web sections is a flange 13. The edges of the plates underlap these flanges and, as illustrated in Fig. 3, there is a plate 14 at the back, preferably of the same width as the flanged post and the rivets which secure the plates to the flanges of the post also secure this tie plate thereto. The webs of the posts may be secured by rivets or by welding, as at 15. By offsetting the plates, as illustrated in Fig. 3, and inserting the tie plate in this offset the countersunk heads of the rivets are arranged flush with the inner surfaces of the plates.

The end construction is somewhat similar to the side construction with the exception that the plates 5^a at each end are narrower, and the center plate 5^b, in the present instance, has a series of transverse corrugations and the plates 5^c have a series of short diagonal corrugations. These two plates are much narrower than the outer plates 5^a, which have the diagonal rib 10^a similar to that of the side plates. The posts 7 are similar in construction to the side posts 6, as clearly shown in Figs. 2 and 4.

In some instances, the construction of the posts may be modified.

In Fig. 7, I have illustrated the side plates 4^a having inturned flanges 9^a, which extend between the webs 12^a of the posts 6^a, the posts, in this instance, being on the inside of the car instead of on the outside, and transverse rievts 15^a may extend through the webs and through the flanges of the plates, holding them rigidly in position. In this instance, the flanges of the posts are only secured at the bottom to the base frame and at the top to the cornice frame.

In Fig. 8, I have shown a modification in which a T beam is used in connection with the post, the flanges of the T beam 14^a being secured to the flanges of the post 6^b and to the plates 4^b. The portion 14^b of this beam

extends between the webs of the posts and is secured thereto by rivets, or other fastenings, 15^b.

In Fig. 9, I have shown another modification in which the post 6^c has portions 13^a which extend between the side plates which are spaced apart.

In Fig. 10, I have shown another modification in which the plates 4^d have inturned flanges 9^a, which are secured together by transverse rivets and, in this instance, the ribs 10^d are formed on the inside of the plate and are on a line with the edges of the flanges. The post 6^d is made as shown in Fig. 3 and its flanges are secured to the plates at intervals.

In each of these instances, the posts are made from sheet metal plates, bent to form heads, webs and flanges and the posts may be made from plates of any thickness desired, according to the type of car to which the invention is applied. The plates with the diagonal ribs, or corrugations, are claimed in a companion application Serial No. 71,727 filed January 12, 1916.

I claim:

1. The combination in a freight car, of the box type, of a base frame and a roof frame; plates extending from the base frame to the roof frame and secured to said frames, the vertical edges of the plates being offset; and a series of pressed sheet metal posts at the junction of the said plates, said posts having flanges, webs and head, the flanges of the posts overlapping the offset portions of the plates and secured thereto.

2. The combination in a freight car, of the box type, of a base frame and a roof frame; plates extending from the base frame to the roof frame and secured to said frame, the vertical edges of the plates being offset; a series of pressed sheet metal posts at the junction of the said plates, said posts having flanges, webs and head, the flanges of the posts overlapping the offset portions of the plates; tie plates extending across the joints between the plates at the posts; and means for securing the flanges of the plates, the offset portions of the plates, and the tie plates together.

3. The combination in a freight car of the box type, of a base frame and a roof frame; plates extending from the base frame to the roof frame and secured to said frame, the vertical edges of the plates being offset, a series of pressed sheet metal posts at the junction of the said plates, said posts having flanges, webs and head, the flanges of the posts overlapping the offset portions of the plates; T-shaped tie plates extending across the joints at the back of the plates and having a portion extending forward between the side plates and between the webs of the posts, the tie plates being secured by rivets to the side plates and the posts.

JOHN S. WORTH.