June 7, 1955 W. J. MEYER 2,709,973

RAILWAY CAR SIDE WALL

Filed Nov. 13, 1952 3 Sheets-Sheet 1

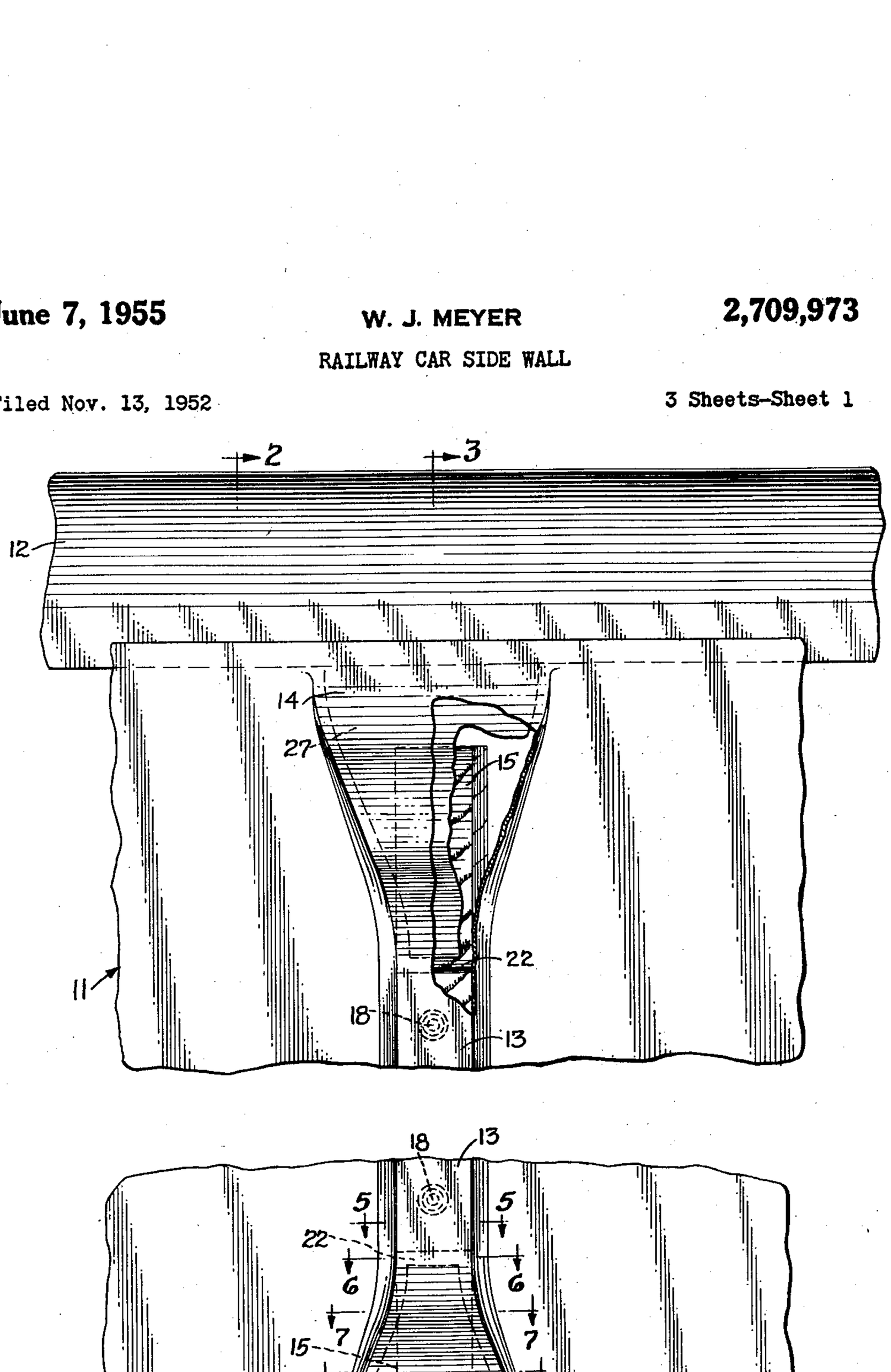

Fig. 1

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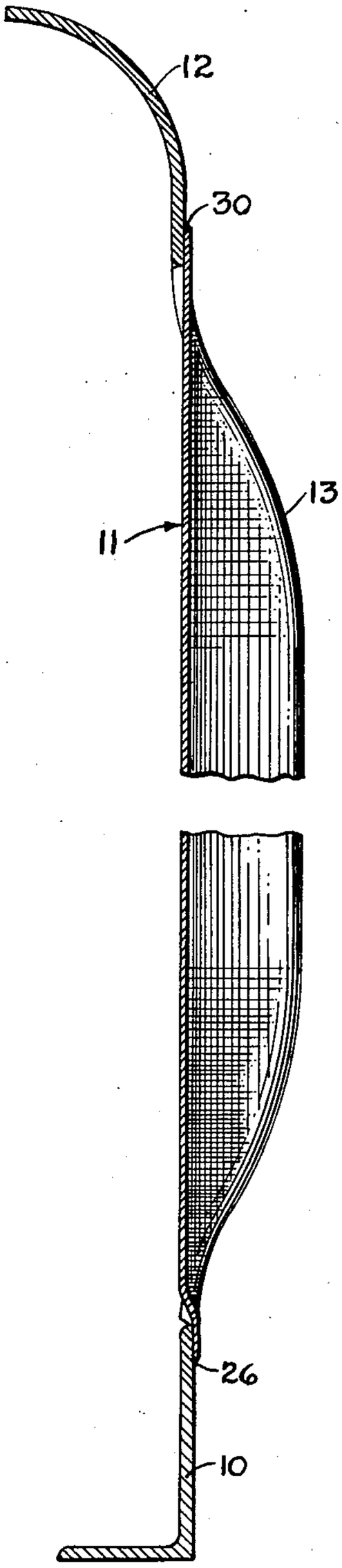

Fig. 2

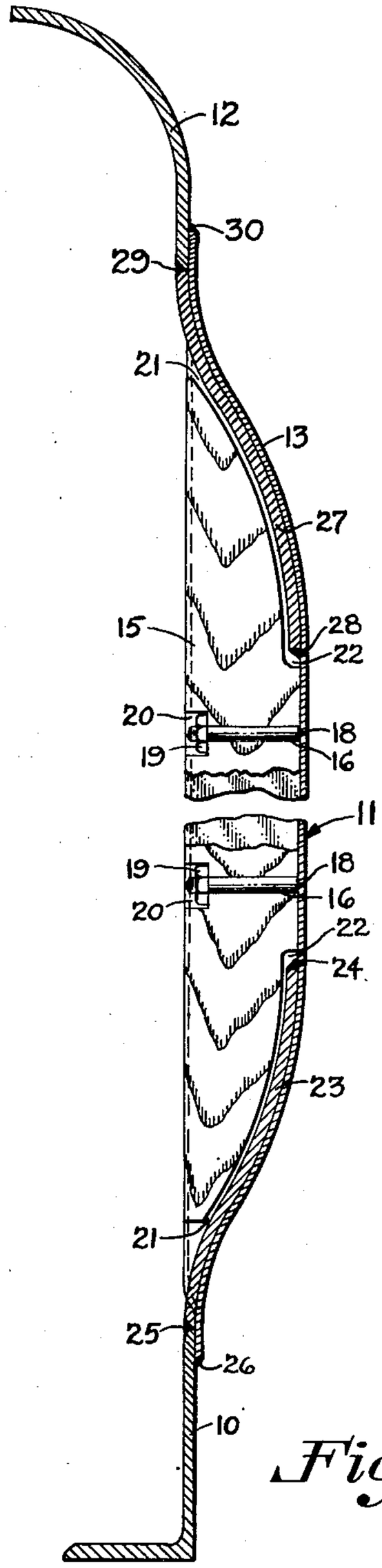

Fig. 3

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RAILWAY CAR SIDE WALL

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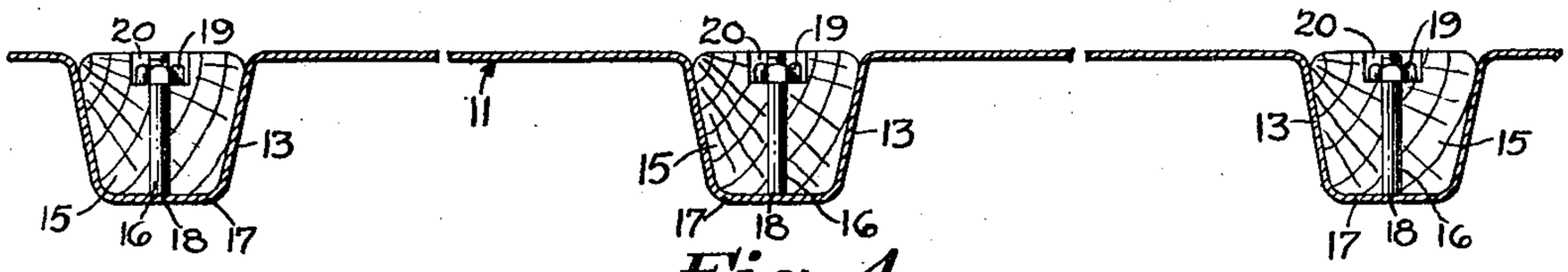

Fig. 4

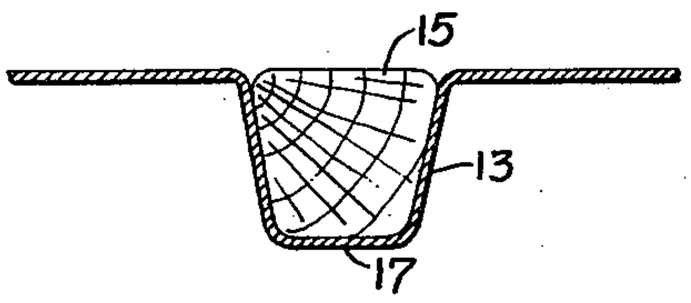

Fig. 5

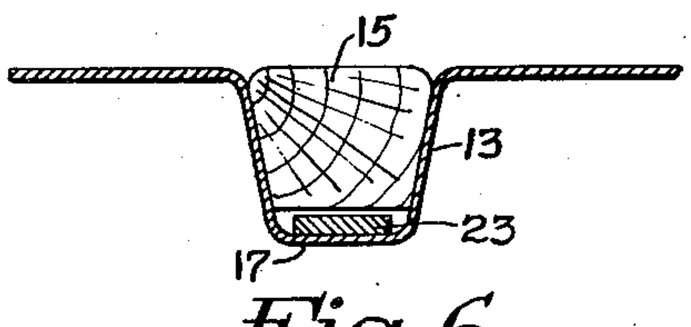

Fig. 6

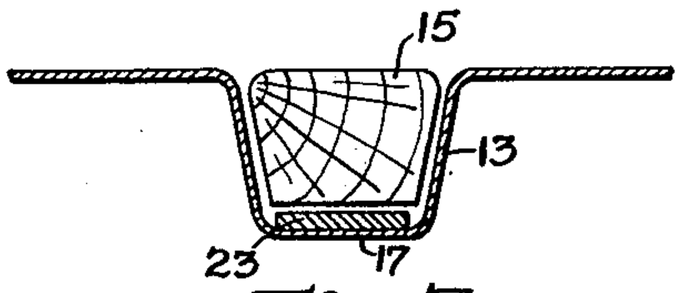

Fig. 7

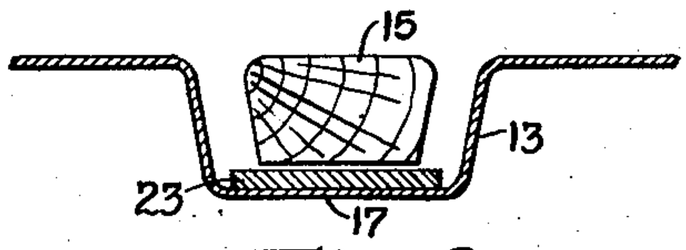

Fig. 8

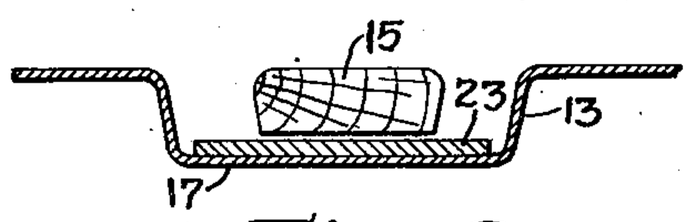

Fig. 9

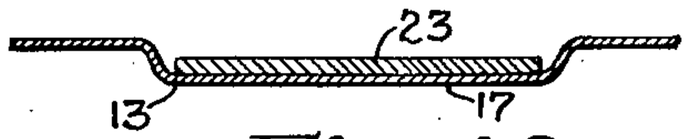

Fig. 10

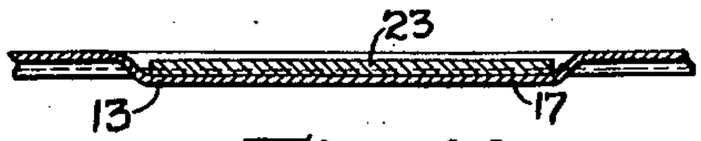

Fig. 11

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RAILWAY CAR SIDE WALL

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Application November 13, 1952, Serial No. 320,196

13 Claims. (Cl. 105—409)

This invention relates to side walls for railway cars and is primarily concerned with a novel means of attaching a side wall to adjacent portions of the car.

The principal object of the invention is to provide in a railway car having a side wall a plurality of reinforcing plates secured along one edge of the side wall and adapted to be secured to the adjacent portion of the car.

Another object of the invention is to provide in a railway car a side wall having vertically extending corrugations therein and a reinforcing plate secured in each corrugation at the bottom of the side wall and secured to the side sill and a reinforcing plate secured in each corrugation at the top of the side wall and secured to the side plate.

A further object of the invention is to provide a railway car side wall having vertically extending corrugations therein with a furring strip secured in each corrugation and a reinforcing plate secured in each corrugation at the bottom of the side wall between the furring strip and the web of the corrugation and a reinforcing plate secured at the top of the side wall between the furring strip and the web of the corrugation.

An important object of the invention is to provide a railway car side wall having corrugations therein extending from one edge thereof to another and the ends of the corrugations being flared with furring strips secured in the corrugations and decreasing in cross sectional area adjacent the ends of the strips and having reinforcing plates secured in the flared portions of the corrugations between the furring strips and the webs of the corrugations and having one of their ends located inwardly of the adjacent edge of the side wall and having their other ends located adjacent the edge of the side wall and increasing in cross sectional area from their inward ends.

The foregoing and other objects of the invention are attained by the construction and arrangement illustrated in the accompanying drawings wherein:

Fig. 1 is a fragmentary side elevational view of a side wall of a railway box car with the central portion of the side wall omitted and only fragmentary top and bottom portions of the side wall shown;

Fig. 2 is a cross sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is a cross sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is a horizontal sectional view of a portion of the side wall shown in Fig. 1;

Fig. 5 is a cross sectional view through one of the corrugations in the side wall taken on the line 5—5 of Fig. 1;

Fig. 6 is a cross sectional view through one of the corrugations in the side wall taken on the line 6—6 of Fig. 1;

Fig. 7 is a cross sectional view through one of the corrugations in the side wall taken on the line 7—7 of Fig. 1;

Fig. 8 is a cross sectional view through one of the corrugations in the side wall taken on the line 8—8 of Fig. 1;

Fig. 9 is a cross sectional view through one of the corrugations in the side wall taken on the line 9—9 of Fig. 1;

Fig. 10 is a cross sectional view through one of the corrugations in the side wall taken on the line 10—10 of Fig. 1; and,

Fig. 11 is a cross sectional view through one of the corrugations in the side wall taken on the line 11—11 of Fig. 1.

The invention comprises a side wall construction for a railway freight car. The side wall is provided with a plurality of spaced vertically extending corrugations. A furring strip is positioned in each corrugation and is secured to the respective corrugation and the lower end of each furring strip terminates at a location spaced from the bottom edge of the side wall and the upper end of each furring strip terminates at a location spaced from the top edge of the side wall. A reinforcing plate is positioned in each corrugation between the respective furring strip and the web of the corrugation at the bottom edge of the side wall and the upper end of each reinforcing plate is welded to the respective corrugation and the lower end thereof is welded to the side sill. An identical arrangement of reinforcing plates is also provided along the top edge of the side wall with the lower end of each reinforcing plate welded to the respective corrugation and the upper end welded to the side plate. It will thus be seen that joints between the top and bottom edges of the side wall and the adjacent portions of the car are created which will withstand great stresses and a novel side wall construction is provided which is of great strength.

In the drawings, 10 designates a side sill, 11 a side wall, and 12 a side plate, of a railway box car. The side wall 11 has a plurality of spaced vertically extending corrugations 13 therein extending from the bottom edge thereof to the top edge. The ends of each corrugation 13 are flared as at 14 and each end of each corrugation is flared from a location spaced inwardly from the adjacent edge of the side wall 11 to the edge of the wall as best shown in Fig. 1. Between the flared portions 14 each corrugation 13 is uniform in cross section and the distance between the flared portions 14 constitutes the major part of the length of each corrugation. A furring strip 15 is positioned in each corrugation 13 and the lower end of each furring strip terminates at a location spaced from the bottom edge of the side wall 11 and the upper end terminates at a location spaced from the top edge of the side wall as best shown in Figs. 1 and 3. A plurality of spaced securing elements or studs 16 extend through each furring strip 15 and one end of each stud is welded to the web 17 of the respective corrugation 13 as at 18 and the other end is threaded and a nut 19 engages the threaded end and seats in a recess 20 provided in the respective furring strip 15. The lower end and the upper end of each furring strip 15 is cut away to provide spaces 21 between the furring strip and the web 17 of the respective corrugation 13. Each furring strip 15 decreases in cross sectional area at each end, more specifically it decreases in thickness at each end, from a location 22 inwardly of the adjacent edge of the side wall 11 toward said edge as best shown in Figs. 5 to 9 inclusive. However, between the locations 22 each furring strip 15 is uniform in cross sectional area and thickness and the distance between the locations 22 constitutes the major part of the length of each furring strip.

A series of reinforcing plates 23 are positioned along the bottom edge of the side wall 11 with a single reinforcing plate positioned in the flared portion 14 of each

corrugation 13 in the space 21 between the furring strip 15 and the web 17 of the corrugation as best shown in Fig. 3. Each reinforcing plate 23 has one end located inwardly of the bottom edge of the side wall 11 and has its other end located adjacent the bottom edge of the side wall and each reinforcing plate increases in cross sectional area, more specifically it increases in width, from the inward end thereof to said other end all as best shown in Figs. 3 and 5 to 11 inclusive. Each reinforcing plate 23 is welded to its respective corrugation 13 by a weld 24. Each reinforcing plate 23 is welded to the side sill 10 by a weld 25 and the bottom edge of the side wall 11 is welded to the side sill by a weld 26.

A series of reinforcing plates 27, identical in size and shape to the reinforcing plates 23, are positioned along the top edge of the side wall 11 with a single reinforcing plate positioned in the flared portion 14 of each corrugation 13 in the space 21 between the furring strip 15 and the web 17 of the corrugation. Each reinforcing plate 27 is welded to its respective corrugation by a weld 28. Each reinforcing plate 27 is welded to the side plate 12 by a weld 29 and the top edge of the side wall 11 is welded to the side plate by a weld 30.

From the foregoing it will be seen that there has been provided joints between the top and bottom edges of a railway car side wall and the adjacent portions of the car which will withstand great stresses and affords a novel side wall construction which is of great strength.

What is claimed is:

1. In a railway car, a side sill, a side plate, a side wall having a plurality of vertically extending corrugations therein extending from the bottom edge thereof to the top edge, a reinforcing plate positioned in each corrugation at the bottom edge of the side wall and secured thereto and to the side sill, and a reinforcing plate positioned in each corrugation at the top edge of the side wall and secured thereto and to the side plate.

2. In a railway car, a side sill, a side plate, a side wall having a plurality of vertically extending corrugations therein extending from the bottom edge thereof to the top edge, a reinforcing plate positioned in each corrugation at the bottom edge of the side wall and welded to the wall and to the side sill, and a reinforcing plate positioned in each corrugation at the top edge of the side wall and welded thereto and to the side plate.

3. In a railway car, a side sill, a side plate, a side wall having a plurality of vertically extending corrugations therein extending from the bottom edge thereof to the top edge, a furring strip positioned in each corrugation, and secured thereto, a reinforcing plate positioned in each corrugation between the respective furring strip and the web of the corrugation at the bottom edge of the side wall and welded to the respective corrugation and to the side sill, and a reinforcing plate positioned in each corrugation between the respective furring strip and the web of the corrugation at the top edge of the side wall and welded to the respective corrugation and to the side plate.

4. In a railway car, a side wall having a plurality of corrugations therein extending from one edge thereof to another edge, a furring strip positioned in each corrugation and secured thereto, a first reinforcing plate positioned in each corrugation at said one edge of the side wall between the furring strip and the web of the corrugation and secured to the corrugation, and a second reinforcing plate positioned in each corrugation at said another edge of the side wall between the furring strip and the web of the corrugation and secured to the corrugation.

5. In a railway car, a side wall having a plurality of vertically extending corrugations therein extending from the bottom edge thereof to the top edge, a furring strip positioned in each corrugation and secured thereto, a first reinforcing plate positioned in each corrugation at the bottom edge of the side wall between the furring strip and the web of the corrugation and secured to the corrugation, and a second reinforcing plate positioned in each corrugation at the top edge of the side wall between the furring strip and the web of the corrugation and secured to the corrugation.

6. In a railway car, a side wall having a plurality of vertically extending corrugations therein extending from the bottom edge thereof to the top edge, a furring strip positioned in each corrugation, a first reinforcing plate positioned in each corrugation at the bottom edge of the side wall between the furring strip and the web of the corrugation, a first weld securing each reinforcing plate to its respective corrugation, a second reinforcing plate positioned in each corrugation at the top edge of the side wall between the furring strip and the web of the corrugation, a second weld securing each second reinforcing plate to its respective corrugation, and a plurality of securing elements extending through each furring strip and secured to the respective corrugation and securing each furring strip to its respective corrugation.

7. In a railway car, a side wall having a corrugation therein extending to one edge thereof, and a reinforcing plate positioned in the corrugation and secured thereto and having one end located inwardly of said edge of the side wall and its other end located adjacent said edge and the reinforcing plate increasing in cross sectional area from said one end thereof to said other end.

8. In a railway car, a side wall having a corrugation therein extending to one edge thereof, and a reinforcing plate positioned in the corrugation and secured thereto and having one end located inwardly of said edge of the side wall and its other end located adjacent said edge and the reinforcing plate increasing in width from said one end thereof to said other end.

9. In a railway car, a side wall having a corrugation therein extending to one edge thereof and the corrugation being flared from a location spaced inwardly from said edge of the side wall to said edge, and a reinforcing plate positioned in the flared portion of the corrugation and secured thereto and having one end located inwardly of said edge of the side wall and its other end located adjacent said edge and the reinforcing plate increasing in cross sectional area from said one end thereof to said other end.

10. In a railway car, a side wall having a corrugation therein extending to one edge thereof and the corrugation being flared from a location spaced inwardly from said edge of the side wall to said edge, and a reinforcing plate positioned in the flared portion of the corrugation and secured thereto and having one end located inwardly of said edge of the side wall and its other end located adjacent said edge and the reinforcing plate increasing in width from said one end thereof to said other end.

11. In a railway car, a side wall having a corrugation therein extending to one edge thereof, a furring strip positioned in the corrugation and secured thereto, and a reinforcing plate positioned in the corrugation between the furring strip and the web of the corrugation and secured to the corrugation.

12. In a railway car, a side wall having a corrugation therein extending to one edge thereof and the corrugation being flared from a location spaced inwardly from said edge of the side wall to said edge, a furring strip positioned in the corrugation and secured thereto and the furring strip decreasing in cross sectional area from a location inwardly of said edge of the side wall toward said edge, and a reinforcing plate positioned in the flared portion of the corrugation between the furring strip and the web of the corrugation and secured to the corrugation and having one end located inwardly of said edge of the side wall and its other end located adjacent said edge and the reinforcing plate increasing in cross sectional area from said one end thereof to said other end.

13. In a railway car, a side wall having a corrugation therein extending to one edge thereof and the corrugation being flared from a location spaced inwardly from said edge of the side wall to said edge, a furring strip posi-

tioned in the corrugation and secured thereto and the furring strip decreasing in thickness from a location inwardly of said edge of the side wall toward said edge and a reinforcing plate positioned in the flared portion of the corrugation between the furring strip and the web of the corrugation and secured to the corrugation and having one end located inwardly of said edge of the side wall and its other end located adjacent said edge and the

reinforcing plate increasing in width from said one end thereof to said other end.

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