May 6, 1969 R. MOWATT-LARSSEN 3,442,225

SIDE PLATE FOR RAILROAD CAR

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FIG. 2.

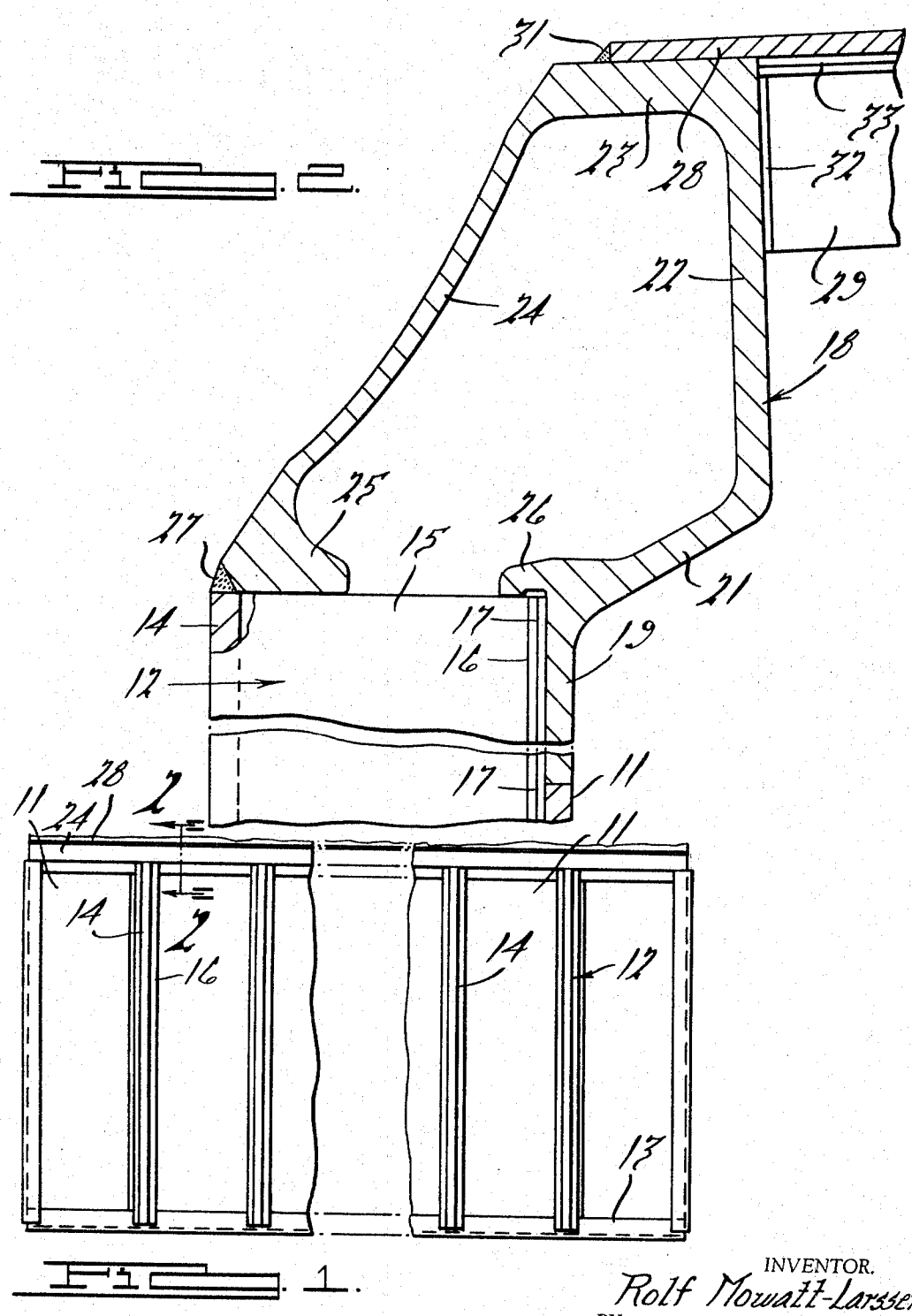


FIG. 1.

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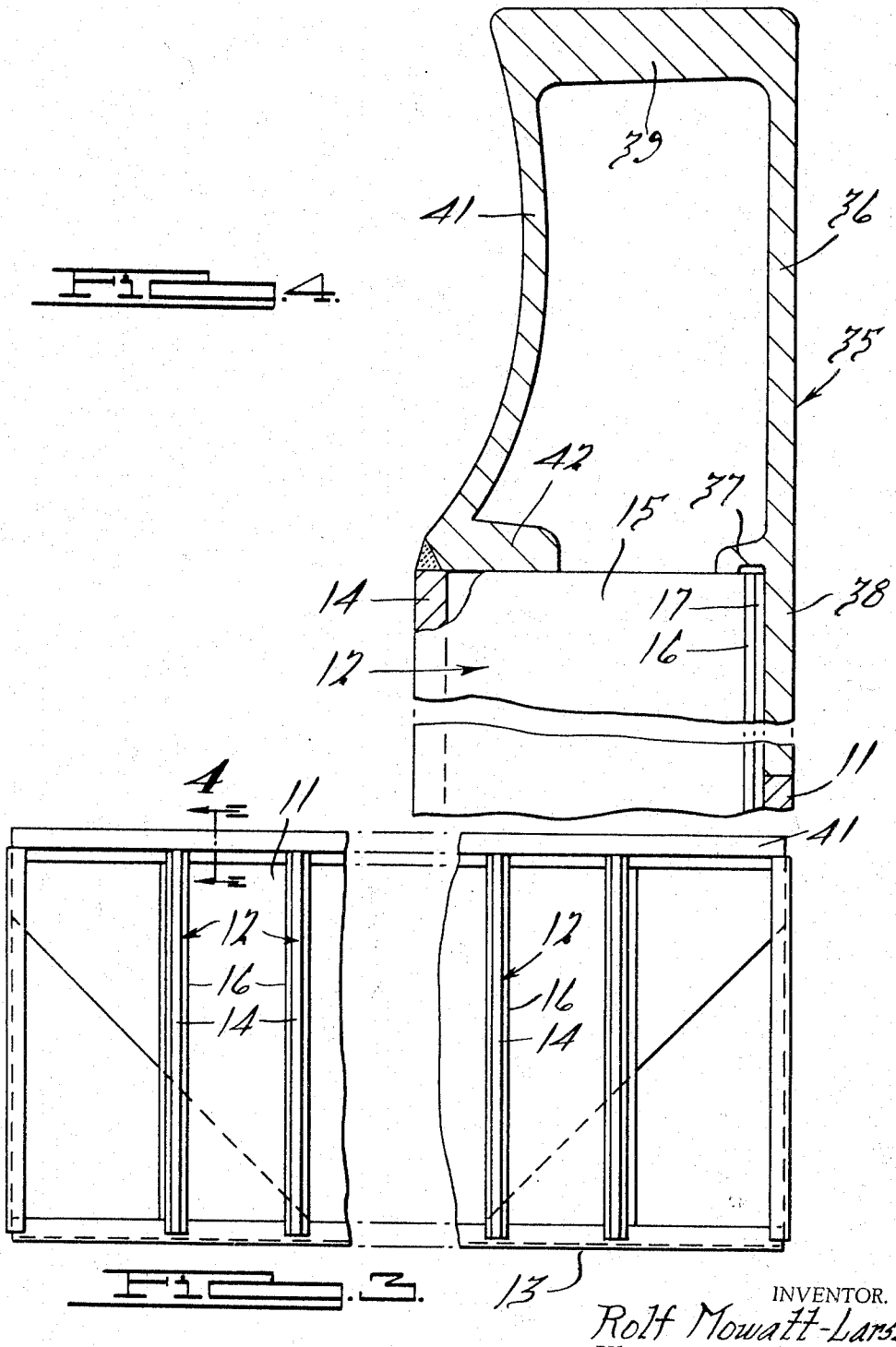


FIG. 4.

FIG. 3.

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3,442,225

SIDE PLATE FOR RAILROAD CAR

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U.S. Cl. 105—409 9 Claims

ABSTRACT OF THE DISCLOSURE

The extruded side plate strengthens the top of the side sheets and posts and is provided with a strain relief side to permit expansion to prevent cracking and to compensate for shrinkage due to welding. The side plates form a support for the roof and the crossbows thereof when used. The arrangement also permits the fabrication of the roof separately from the car which may, after assembly, be moved on to the top of the side plate and be permanently secured thereto as by welding when the top of the car is to be covered.

This invention relates to side plates for railroad cars and particularly to an extruded side plate for the top of the side sheets and posts of an open top or covered railroad car.

Background of the invention

The novelty of the invention pertains to the particular form of the side plate employed at the top of the side sheets and posts of a railroad car. The closest art which is known is that disclosed in the patent to Gilpin, No. 2,460,982, issued Feb. 8, 1949, for "Extruded Frame Member." The extruded member is of box section construction and provided with top and side flanges which are secured to the side and roof plates by rivets.

Summary of the invention

The extruded side plate of the present invention has a flange which is disposed in continuation of the side sheets of the car, a top section and an outer side which is curved to permit deformation under stress to avoid cracking and to function as an expansion joint. The bottom is open having inwardly extending sections which rest upon the ends of the posts and are welded thereto. The posts and side sheets are made of aluminum the same as the side plate. When the car is to be covered the crossbows beneath the top plates of the car roof extend between the side plates. The roof is preferably independently fabricated and applied to the top opening and welded to the side plates.

Brief description of the drawings

FIGURE 1 is a broken view in elevation of a railroad car body having a side plate thereon embodying features of the present invention;

FIG. 2 is an enlarged broken sectional view of the structure illustrated in FIG. 1, taken on the line 2—2 thereof;

FIG. 3 is a broken view of a hopper type of railroad car body, and

FIG. 4 is an enlarged broken sectional view of the structure illustrated in FIG. 3, taken on the line 4—4 thereof.

Description of the preferred embodiments

The railroad car illustrated in FIGURE 1 has a plurality of side sheets **11** which are made of aluminum or like metal and welded together and to a plurality of side posts **12** and to a side sill **13**. The posts and sill are preferably extruded from aluminum or like metal and the post has an end face **14**, sloping side faces **15** and end

flanges **16** which are secured to the sheets **11** by welds **17**.

The side plate **18** is made of aluminum or like extrudable metal having a vertical flange **19** which rests upon the top of the side sheets **11** and which extends inwardly at **21** and upwardly at **22**. The upwardly extending portion **22** slopes outwardly from the vertical to a top section **23** which slopes downwardly to mate with the slope of the roof plates which rest thereon when the car is to be covered. A front face **24** bulges inwardly being of arcuate forms struck on a substantial radius and terminating in an end portion **25**. The end portion **25** and an inwardly extending portion **26** from the flange **19** rest upon the top of the posts **12**. The flanges **16** of the post are welded to the flange **19** by a continuation of the weld **17** and the end portion **25** is welded to the face **14** of the posts by a weld **27**.

The side plates substantially strengthen the sheets **11** and posts **15** at opposite sides of the car and any stresses or strains are relieved by the bulging portion **24** which may be deflected thereby permitting expansion of the walls and preventing any cracking of the material due to strain. The side plates can form a support for roof plates **28** when used, and which preferably may be separately assembled on crossbows **29** which may be of U-shape, T-shape or any other configuration. When using such a prefabricated roof it will drop within the opening defined by the sloping upwardly extending portions **22** of the two side plates **18**. The plates **28** are secured by welds **31** to the section **23** of the side plates and the bows **29** are secured to the upwardly extending portions **22** by the weld **32**. The bows **29** are secured to the roof plates **28** by welds **33**. The roof thus attached prevents the side plates **18** from moving outwardly due to excessive loads on the sheets **11**.

Referring to FIGS. 3 and 4, a further form of side plates **35** is illustrated mounted on the top of the side sheets **11** and the posts **12** at one side of a railroad car. The side plate has an inner wall **36** from which a flange **37** extends outwardly and a portion **38** therebelow which abuts the ends of the side sheets **11** and mates with the flanges **16** of the posts **12** to which the lower portion **38** is secured by the continuation of the weld **17** which secures the flanges **16** to the side sheets **11**. The upwardly extending wall **36** is joined to a top wall **39** which is herein illustrated as being horizontally disposed. It is to be understood that the top wall may be sloped the same as the slope provided on the top wall **23** of the side plate **18**. A front wall **41** is arched downwardly from the outer end on the top wall **39** to be bowed inwardly relative to a bottom flange **42** which is aligned with the flange **37**. The arched outer wall permits the expansion and contraction of the side plate and absorbs any strains which may occur in the side plate to prevent the cracking of the metal thereof. The flanges **37** and **42** are welded to the posts in the manner as pointed out hereinabove.

The car on which the side plate **35** is secured, as illustrated in FIG. 3, is of the hopper type and in most cases would not have a roof applied thereto. However, in case it is desirable to have a roof applied to the hopper type of car, this may be separately constructed and applied between the side plates **35** in the manner as pointed out hereinabove with regard to the structure of FIGURES 1 and 2.

What is claimed is:

1. In combination, a railroad car side sheet, side posts secured to said side sheet, a side plate comprising an elongated unitary monolithic extruded metallic member, said member including an inner wall, a portion extending downwardly from said inner wall and engaging and being secured to said side sheet, said inner wall joining a generally horizontal outwardly extending top wall which

joins a curved outer wall, said outer wall being curved in a manner to permit expansion and contraction of said member, a flange extending inwardly from the lower end of said outer wall, and a flange extending outwardly from said inner wall, said flanges being substantially coplanar and lying in a substantially horizontal plane and being in opposed spaced relationship to one another to define a slot therebetween.

2. Apparatus as defined in claim 1 wherein said downwardly extending portion is disposed in engagement with said posts, the lower edge of said downwardly extending portion being in abutting relationship with the upper edge of said side sheet.

3. Apparatus as defined in claim 1 wherein said inner wall includes a lower portion sloping upwardly and inwardly from said downwardly extending portion.

4. Apparatus as defined in claim 3 wherein said inner wall includes an upper portion which slopes upwardly and outwardly from vertical.

5. Apparatus as defined in claim 1 wherein said inner wall includes a portion offset inwardly from said downwardly extending portion.

6. Apparatus as defined in claim 5 wherein said downwardly extending portion is disposed substantially on the

center line of the mass of the member between said inner and outer walls.

7. Apparatus as defined in claim 1 wherein said top wall includes an upper surface sloping downwardly and outwardly from said inner wall, and a roof panel resting on said upper surface and being secured to said member.

8. Apparatus as defined in claim 1 wherein said curved outer wall curves inwardly from said top wall to said bottom wall.

9. Apparatus as defined in claim 1 wherein said inner wall is of greater thickness than said outer wall.

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U.S. Cl. X.R.

52—45, 282, 573, 731