

May 23, 1961

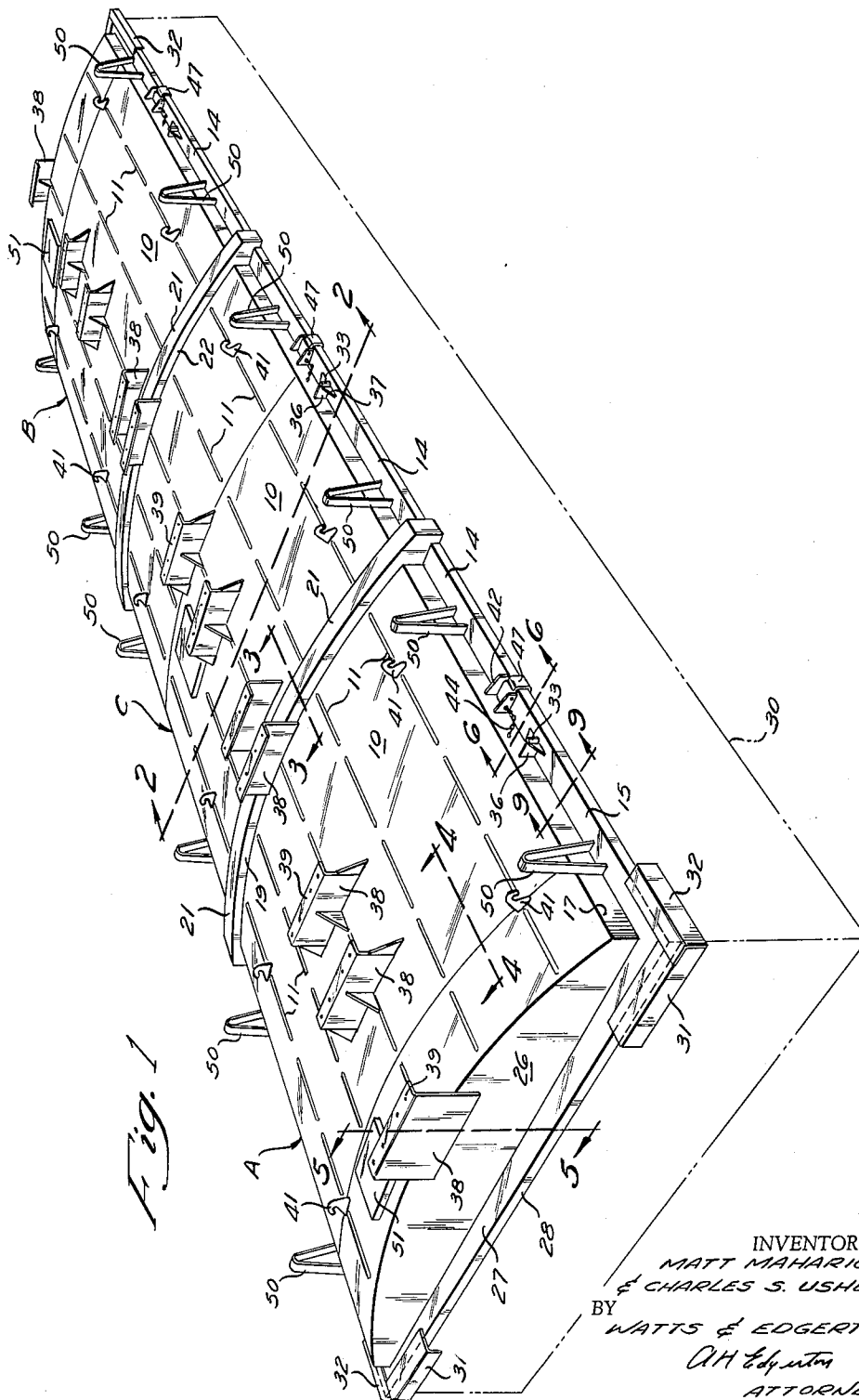
M. MAHARICK ET AL

2,985,118

GONDOLA CAR ROOF

Filed June 16, 1959

3 Sheets-Sheet 1



May 23, 1961

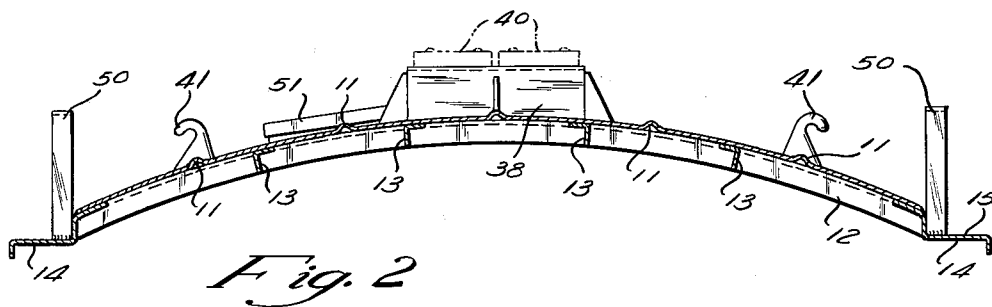
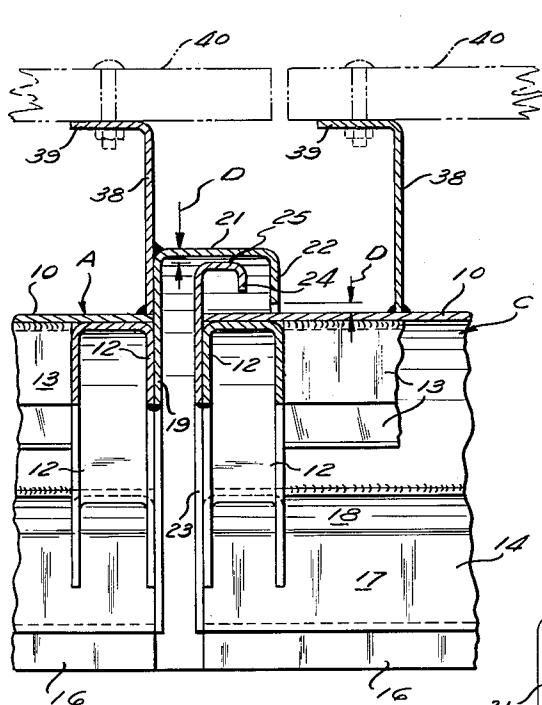
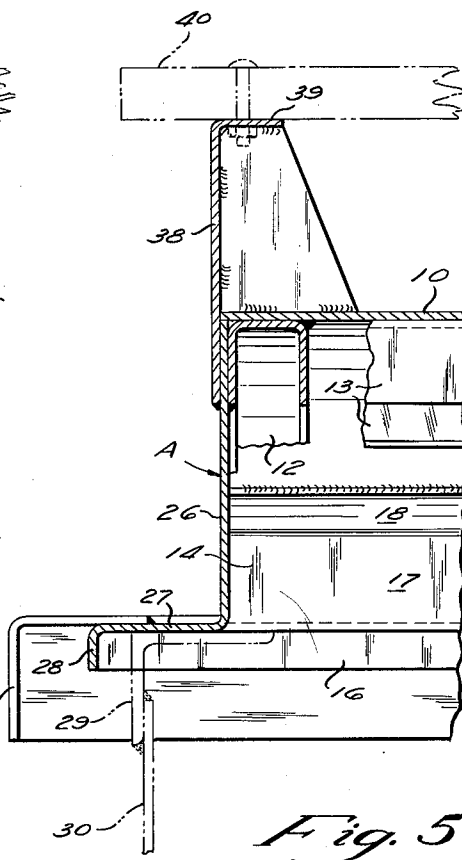
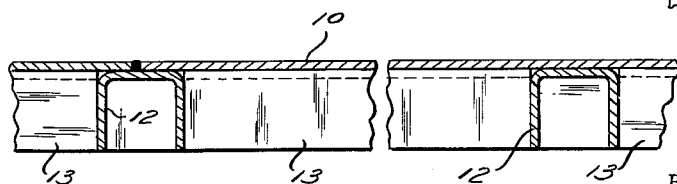
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3 Sheets-Sheet 2



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3 Sheets-Sheet 3

Fig. 6

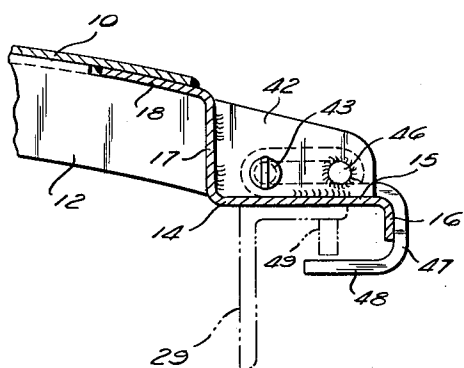


Fig. 7

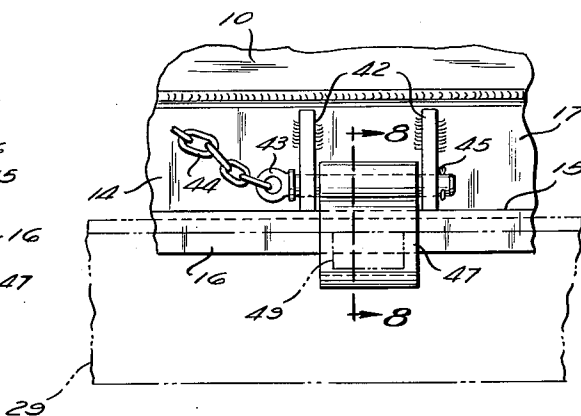
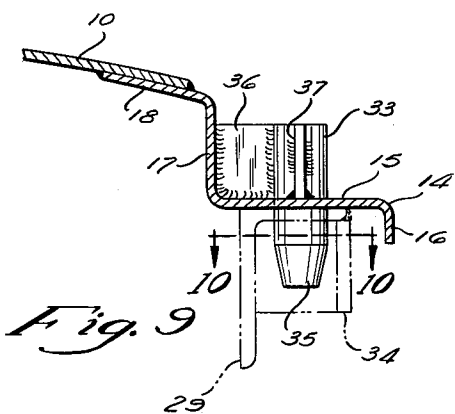


Fig. 9

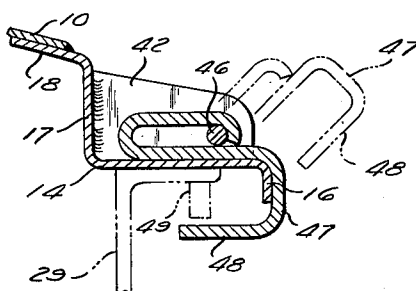


Fig. 8

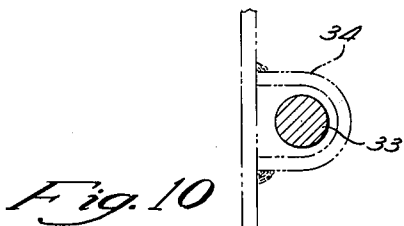


Fig. 10

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GONDOLA CAR ROOF

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Filed June 16, 1959, Ser. No. 820,643

2 Claims. (Cl. 105—377)

This invention relates to cover plate assemblies for railroad freight cars, and more specifically to removable sectional cover plates constituting a roof for a gondola or similar open top freight car.

One of the objects of the invention is to provide a cover embodying a central and end panels, each equal in length to approximately one-third the length of the car, the latter having overlapping end sections thereon to effect a water-shed between the panels, yet accommodate the ready removal thereof.

Another object of the invention is to provide locating dowels in the base of each panel and latch mechanisms therefor to accommodate the assembly and removal of the panels from the upper edges of the side walls of the freight car.

Another object of the invention is to provide a plurality of vertical stanchions on the cover plate section to accommodate the stacked relation of the plates when in storage.

Another object of the invention is to provide hooks near each corner of each panel to facilitate the elevation or lowered position of the panels.

Further objects of the invention reside in the provision of a cover for an open freight car which is light in weight, sturdy of structure and designed to accommodate progressive loading of segmental portions of the car by lowering the cargo therein coincident the assembly of the cover plates.

Other objects and advantages more or less ancillary to the foregoing, and the manner in which all the various objects are realized, will appear in the following description, which considered in connection with the accompanying drawings, sets forth the preferred embodiment of the invention.

Referring to the drawings:

Fig. 1 is a view in perspective of the improved open car cover assembly.

Fig. 2 is a transverse sectional view thereof, the section being taken on a plane indicated by the line 2—2 in Fig. 1.

Fig. 3 is a vertical sectional view through the end portion of the covers, the section being taken on a plane indicated by the line 3—3 in Fig. 1.

Fig. 4 is a longitudinal section through one end portion of the cover, the section being taken on a plane indicated by the line 4—4 in Fig. 1.

Fig. 5 is a vertical sectional view through an end portion of one of the end panels, the section being taken on a plane indicated by the line 5—5 in Fig. 1.

Fig. 6 is a sectional view through the roof panel adjacent the latch therefor, the section being taken on a plane indicated by the line 6—6 in Fig. 1.

Fig. 7 is a front elevational view of the latch.

Fig. 8 is a transverse sectional view of the latch shown in Fig. 7, the latch being illustrated in its actuated position.

Fig. 9 is a sectional view of one of the dowel pins,

2

the cover plate being shown in section as indicated by the line 9—9 in Fig. 1; and

Fig. 10 is a transverse sectional view through the dowel pin, the section being taken on a plane indicated by the line 10—10 in Fig. 9.

Referring first to Fig. 1, the cover assembly comprises a pair of removable end panels A and B, and a similar center panel C. The panels are formed from arcuate sheet metal plates 10 having a plurality of spaced lineal beads 11 pressed in the face thereof and are supported by transverse arcuate channel irons 12 disposed in spaced relation with each other throughout the length of each panel. The channel irons 12 constitute roof beams and are reinforced by secondary angle iron sections 13 between the angle irons 12 in aligned relation with each other throughout the length of the panels. The ends of the channel irons 12 are welded to supporting rails 14 embodying lineal webs 15, depending flanges 16 on the outer edges thereof, upwardly directed flanges 17 and angularly disposed inner flanges 18 on the upper edges of the flanges 17. The plates 10 are welded to the upper face of the flanges 18 and the ends of the upper flanges of the channel irons 12 are cut away to provide a recess for the flange 18.

The inner ends of the panels A and B are formed with channel iron 19 welded to the outer depending leg of a channel 12. The web 21 of the channel 19 is formed with a second foreshortened leg 22. Each end of the panel C is provided with a channel 23 having a web 25 and a foreshortened leg 24 within the channel 19. The upper face of the flange 25 and the lower face of the leg 22 are positioned to provide a clearance indicated by the arrows D (Fig. 3) when the panel sections A and C and B and C are in assembled relation on the upper edge of the side wall of the gondola car. As is seen in Fig. 3 the adjacent ends of the panels are spaced apart from one another longitudinally of the car. This structure not only provides a water-shed for the joints between the center and end panels, but also affords vents to facilitate the circulation of air through the car.

As will be seen in Fig. 5, the outer ends of the panels A and B are provided with vertical walls 26 having outwardly directed webs 27 thereon and depending flanges 28 on the ends thereof. The flanges 28 are spaced from the outer faces of angle irons 29 (shown in dot-dash lines), which are welded to the upper edge of the side walls 30 of the gondola car. The corners of the end panels A and B are reinforced by angle irons 31 and 32 welded to the upper face of the webs 27 of the end walls 26 and the web 15 of the side rails 14. The angle irons 31 and 32 are spaced outwardly from the flanges 28 of the end walls, and 16 of the side walls 14, to provide guide plates for the panels A and B when they are lowered in position preliminary to the adjustment of the panels with dowel pins 33 in seated engagement in keepers 34 on the sides of the gondola angle iron rim 29.

The dowel pins 33, as shown in Figs. 1 and 9, are mounted in the center of the supporting rails 14 and are formed from cylindrical bar stock with tapered ends 35 to guide the panels in openings in the angle irons 29, and semicircular sleeves 34 may be welded to the lower face of the angle irons 29. The dowel pins are supported in position by gusset plates 36 welded to the inner face of the upper portion of the pins and to the flanges 17 and webs 15 of the supporting rails 14. The pins are further supported by triangular gusset plates 37 welded to the upper portions of the pins and to the webs 15 of the rails 14.

The panels A, B and C are provided with vertical plates 38 in the medial axes of each end thereof, each having a lateral flange 39 on its upper end for the support

of segmental running boards 40, indicated in dot-dash lines in Figs. 3 and 5. When the running boards are secured to flanges 39, as by the nuts and bolts indicated in Figs. 3 and 5, and with their adjacent ends spaced apart from one another by a shorter distance than the distance between the ends of the roof panels all, as shown in Fig. 3, the running boards and plates 38 serve to maintain a clearance between the ends of the adjacent roof panels and thereby provide the spacing necessary for circulation of air into and out of the car between the ends of the roof panels. The plates 10 are provided with hooks 41 to which a cable or chain fall may be attached to lift the plates off of the gondola.

The panels A, B and C are locked on the angle irons 29 by clamps (Figs. 6 and 7) each comprising a pair of spaced vertical plates 42 welded to the web 15 and flange 17 in the center thereof. The plates 42 are cross drilled with aligned openings therein, the inner openings being provided for a draw pin 43 retained, when assembled, by a chain 44 affixed to the flange 17 and a cotter pin 45. A pin 46 in the outer opening constitutes a fulcrum for a steel strap 47 having the upper forward end thereon bent downwardly over the fixed pin 46 in the plates 42, and the rearward end thereof being looped downwardly and outwardly to underlie the pin 46. The free outer end of the strap is bent downwardly and inwardly to form a hook 48 adjacent a boss 49 on the angle 29 of the supporting rail 14. When it is desirable to remove the panels, the draw pin 43 is removed, the strap 47 is moved outwardly, then swung upwardly about the pin 46, as shown in dotted lines in Fig. 8, until the strap 47 lies parallel and adjacent to the flange 17.

The webs 15 of the supporting rails 14 have a plurality of spaced inverted V bars 50 welded thereon. The V bars are of a uniform size and the height thereof is no greater than the dimension from the bottom of the supporting rails to the upper face of the running boards 40. These bars 50 on one panel serve as supports on which another panel may rest when the panels are stacked.

The panels A, B and C are each provided with hatch covers 51 for the inspection of the cargo within the car.

From the foregoing, it will be seen that one or all of the cover panels may be removed, the cargo loaded in the freight car and the end and center panel positioned progressively over the cargo as it is loaded. Such procedure is particularly advantageous when the car is loaded during a rain or snowstorm.

Although the foregoing description is necessarily of a detailed character, in order that the invention may be completely set forth, it is to be understood that the specific terminology is not intended to be restrictive or confining, and that various rearrangements of parts and modifications of detail may be resorted to without departing from the scope or spirit of the invention as herein claimed.

What is claimed is:

1. A cover for an open-top freight car comprising a plurality of removable panels arranged in end-to-end relation with each other and extending throughout the length of the freight car, each of said panels including supporting rails to rest on the top edges of the sides of the car, dowel pins in said rails engageable with the side walls of the car to position the rails thereon, each panel including arcuate angle irons constituting roof beams attached at their ends to said rails and extending transversely of the car, secondary angle irons extending lengthwise of each panel and attached at their ends to said roof beams and sheet metal plates attached to said rails and resting on said beams and secondary angle irons, the adjacent ends of the said panels being disposed in spaced apart and overlapping relation to form therebetween joints having water sheds and air vents for the flow of air therethrough, means for maintaining the adjacent ends of the panels in out of end-to-end contact, and latch means on said supporting rails and engageable with the side walls of the car for retaining the panels on the car.

2. A cover for an open-top freight car comprising a plurality of removable panels arranged in end-to-end relation with each other and extending throughout the length of the freight car, each of said panels including supporting rails to rest on the top edges of the sides of the car, dowel pins in said rails engageable with the side walls of the car to position the rails thereon, each panel including arcuate angle irons constituting roof beams attached at their ends to said rails and extending transversely of the car, secondary angle irons extending lengthwise of each panel and attached at their ends to said roof beams and sheet metal plates attached to said rails and resting on said beams and secondary angle irons, the adjacent ends of the said panels being disposed in spaced apart and overlapping relation to form therebetween joints having water sheds and air vents for the flow of air therethrough, brackets extending up from each of said panels and running boards secured to said brackets, the longitudinal spacing between adjacent ends of the running boards of adjacent roof panels being less than the spacing between the ends of the panels themselves whereby the roof sections are maintained out of end-to-end contact, latch means on said supporting rails and engageable with the side walls of the car for retaining the panels on the car, and means on the top of each panel for the support of a similar panel when assembled thereon in stacked relation.

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