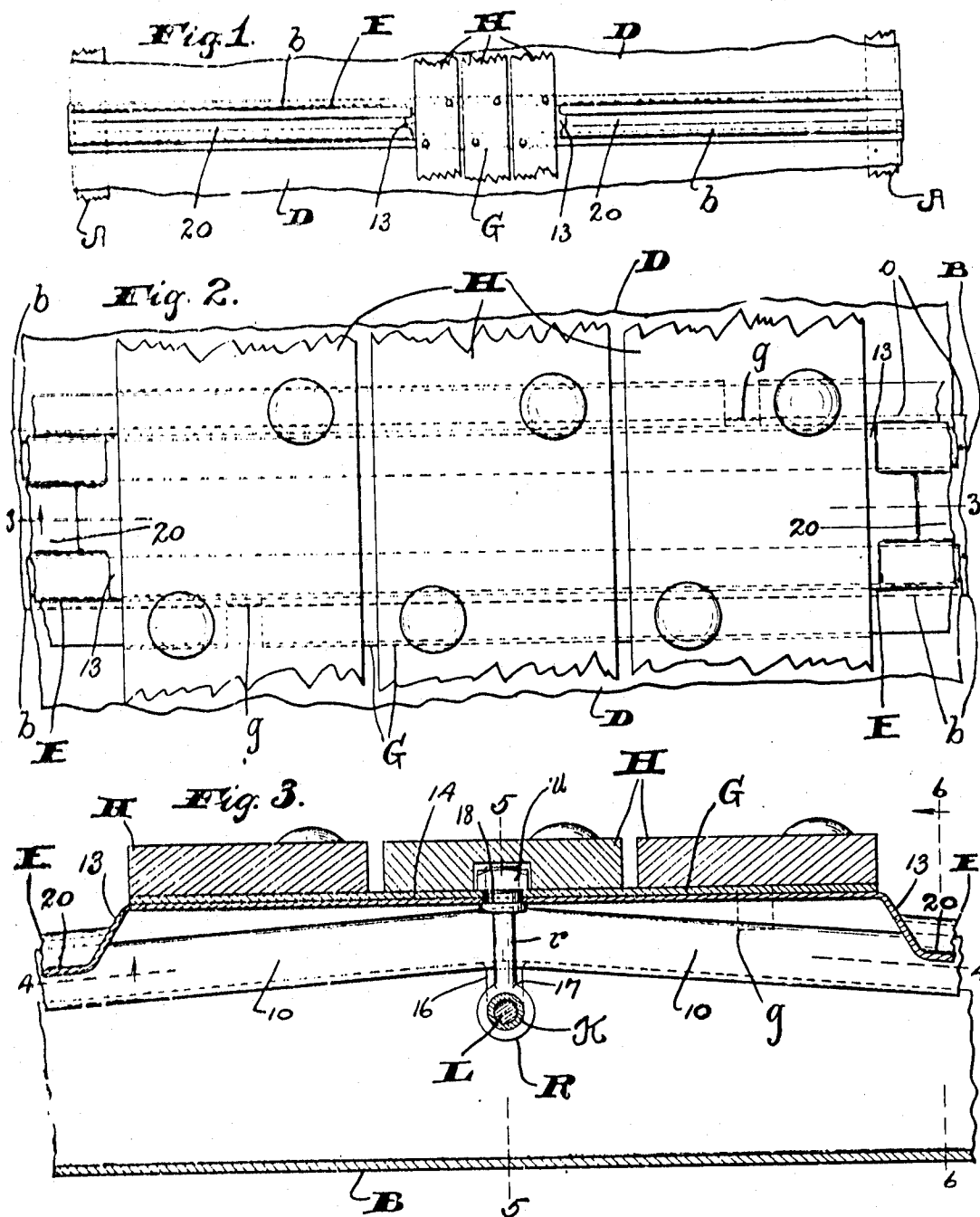


CAR ROOM.

Patented Mar. 18, 1913.

2 SHEETS-8 MEET 1.

1,056,622.



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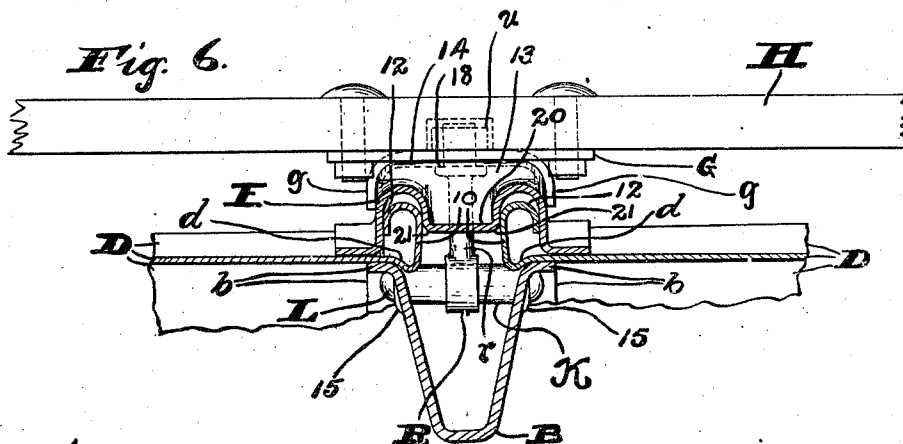
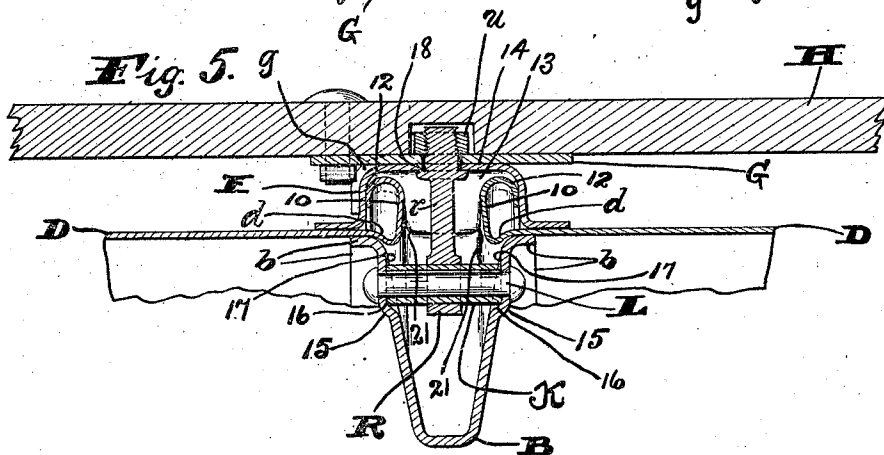
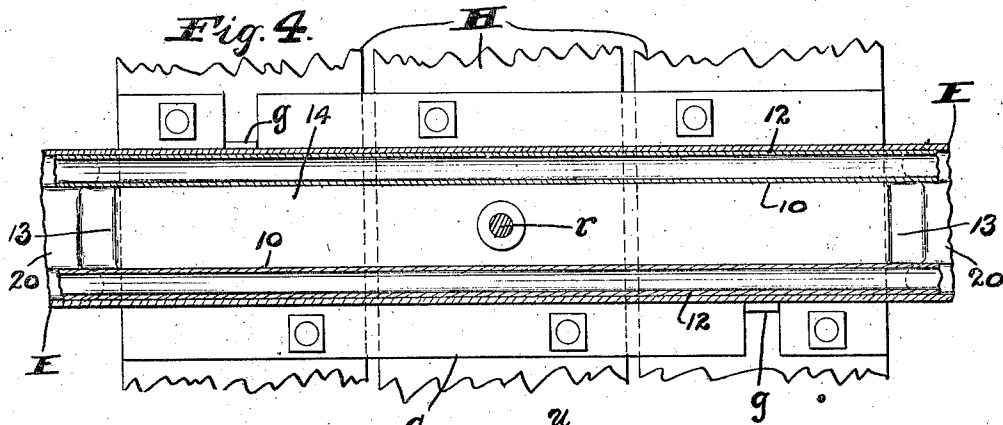
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CAR ROOF.

APPLICATION FILED AUG. 7, 1912.

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2 SHEETS—SHEET 2.

1,056,622.



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The Attorney

UNITED STATES PATENT OFFICE.

WILLIAM S. BIDLE AND JOSEPH A. COSTELLO, OF CLEVELAND, OHIO, ASSIGNORS TO
CLEVELAND CAR SPECIALTY COMPANY, OF CLEVELAND, OHIO, A CORPORATION
OF WEST VIRGINIA.

CAR-ROOF.

1,056,622.

Specification of Letters Patent.

Patented Mar. 18, 1913.

Application filed August 7, 1912. Serial No. 713,771.

To all whom it may concern:

Be it known that we, WILLIAM S. BIDLE and JOSEPH A. COSTELLO, citizens of the United States of America, residing at Cleveland, in the county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Car-Roofs; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

This invention relates to improvements in car-roofs, and pertains more especially to a car-roof comprising a carline consisting of a steel trough bridging the space between the laterally spaced side plates of the frame of the car-roof and employed in supporting two metal roofing sheets which extend from over the carline laterally of the carline in opposite directions and have upwardly projecting flanged side members arranged over and extending longitudinally of the carline and covered by a cap which extends longitudinally of said side members and consequently longitudinally of the carline and is attached to the carline centrally between the ends of the carline by an upright eye-bolt arranged between said roofing-sheets and having an upwardly facing shoulder on which the cap is seated and extending into the aforesaid trough centrally between the sides of the trough and connected to the carline by means comprising a rivet which is arranged substantially horizontally and transversely of and extends through the trough.

One object of this invention is to brace the carline-trough where said rivet extends through said trough, to prevent the lodgment of water within the trough on said rivet and thereby prevent rusting of the rivet, to prevent undue strain on said rivet upon screwing a nut onto the upper end of the bolt to clamp the roofing-cap to the aforesaid shoulder, and to facilitate the assemblage of the component members of the means employed in attaching the aforesaid cap to the carline.

Another object is to prevent any interference by said bolt with the expansion and contraction of the aforesaid roofing-sheets and with any shifting of said roofing-sheets edgewise independently of the roofing-cap

and the carline during the weaving or racking of a car provided with our improved car-roof.

Another object is to employ said cap in spacing the roofing-sheets transversely of the carline without interfering with the expansion and contraction of said roofing-sheets, and without interfering with a displacement of said roofing-sheets edgewise independently of the carline and roofing-cap.

Another object is to have said cap wide enough to permit the employment of comparatively narrow roofing-sheets and yet to have the cap strong and durable in construction.

With these objects in view, and to the end of attaining any other advantage hereinafter appearing, this invention consists in certain features of construction, and combinations and arrangements of parts, hereinafter described, pointed out in the claims, and illustrated in the accompanying drawings.

In said drawings, Figure 1 is a top plan of a portion of a car-roof embodying our invention. Fig. 2 is a top plan illustrating the central portion of Fig. 1 on a larger scale. Fig. 3 is a vertical section on line 3—3, Fig. 2. Fig. 4 is a horizontal section on line 4—4, Fig. 3, looking upwardly. Fig. 5 is a vertical section on line 5—5, Fig. 3. Fig. 6 is a vertical section on line 6—6, Fig. 3, looking in the direction indicated by the arrow.

Referring to Fig. 1 of the drawings, A and A indicate the two laterally spaced horizontally arranged side plates of a car-roof-frame, and a metal carline preferably composed of a steel-blank pressed into the shape required is applied to said side plates in any approved manner and (see Figs. 2, 3, 5, and 6) comprises a trough B which bridges the space between and is suitably connected to the side plates. The trough B is provided at the top with two laterally and outwardly projecting side flanges *b* and *b* which are arranged at opposite sides and extend longitudinally of the trough.

Two roofing-sheets D (see Figs. 2, 5, and 6) extend from over opposite flanges *b* and *b* respectively laterally of the trough B in opposite directions and also extend longitudinally of the trough. Each roofing-sheet D (see Figs. 5 and 6) has an ogee-curved

portion *d* depending into the trough and terminating in an upwardly projecting side member 10 arranged between the sides and extending longitudinally of the trough.

5. Adjacent side members 10 of the roofing-sheets D are spaced apart from top to bottom of said side members and terminate in laterally and outwardly projecting flanges 12 arched in cross-section and extending longitudinally of said side members. A cap E covers and extends longitudinally of said flanges 12 and consequently extends longitudinally of and from end to end of the carline and somewhat presses against the outer sides of the downwardly projecting outer portions of said flanges. Centrally between the ends of the carline said cap has a substantially horizontally arranged top portion 14 formed by somewhat upwardly offsetting said cap, as at 13, and said portion of the cap is arranged above the flanges 12 and forms the body of a running-board-saddle, the top whereof is formed by a substantially horizontally arranged plate G mounted on said portion of the cap and constituting a seat for the running-boards H of the car-roof. The plate G (see Figs. 4, 5, and 6) has downwardly projecting members *g* overlapping the sides of the cap E and formed by striking portions of the plate downwardly at the sides and externally of said cap. Said members *g* are instrumental in holding the plate G in place relative to said cap.

35. Preferably the trough B has its sides diverging upwardly from the bottom of the trough to the flanges *b*, and each side of the trough centrally between the ends of the trough (see Figs. 5 and 6) has a laterally and outwardly offset portion 15 forming a recess 16 which has a laterally and inwardly facing vertically arranged wall 17 arranged directly opposite the corresponding wall of the recess 16 in the opposite side of the trough.

45. A tubular brace K which is annular in cross-section and arranged substantially horizontally and at a right angle to the walls 17 of the recesses 16 extends between and to said walls and consequently from side to side of the trough B, and a rivet L extends endwise through said brace and through the sides of the trough and secures the brace to the trough.

55. An upright bolt, having an eye R embracing the brace K centrally between the sides of the trough, has its shank *r* projecting vertically upwardly and extending loosely through the top portion 14 of the cap and loosely through the plate G, which shank is provided with an upwardly facing annular shoulder 18 arranged next below and forming a seat for said top portion of the cap, and said plate and said cap are clamped to said shoulder by a nut *u* screwed onto

said shank at the upper side of said plate. By the interposition of the brace K between the aforesaid eye-bolt and the rivet G and the tight joints formed between said brace and the walls 17 of the recesses 16 in the sides of the trough B lodgment of water on said rivet between said walls is prevented and rusting of the rivet thereby avoided.

Between each end and its central top portion 14 the cap E has a downwardly offset portion 20 which is arranged within the space between and forms a lateral abutment for the upper portions of the side members 10 of the roofing-sheets. The offset portions 20 of the roofing-sheets obviously space the roofing sheets transversely of the carline without interfering with the expansion and contraction of said roofing-sheets, and without interfering with a displacement of said roofing-sheets edgewise independently of the carline and roofing-cap during weaving or racking of a car provided with a roof embodying our invention. Said offset portions 20 are rounded, as at 21, at the bottom of their sides to avoid any interference by said offset portions with any expansion of the roofing-sheets under said offset portions. The two offset portions 20 of the roofing-cap E extend to opposite ends respectively of the roofing-cap from the central top portion 14 of said cap and are spaced from the eye-bolt. Said eye-bolt, being spaced from the side members 10 of the roofing-sheets and from the offset portions 20 of the roofing-cap E, obviously does not interfere with the expansion and contraction of the roofing-sheets, nor with any shifting of the roofing-sheets edgewise independently of the roofing-cap and carline during weaving or racking of a car provided with our improved car-roof.

What we claim is:—

1. The combination, with the two laterally spaced side plates of a car-roof-frame, a carline extending between and connected to the side plates, and two roofing-sheets extending from over the carline laterally of the carline in opposite directions and also extending longitudinally of the carline, each roofing sheet having an upwardly projecting side member arranged over and extending longitudinally of the carline, said side members of the roofing-sheets being spaced apart from top to bottom of said side members, of a metal cap contoured centrally between its ends to form the body of a running-board-saddle and between its saddle-body-forming portion and its ends having downwardly offset portions arranged between and forming lateral abutments for the upper portions of the aforesaid side members of the roofing-sheets, a substantially horizontally arranged plate forming the top of said saddle and mounted on the saddle-body-forming portion of the cap, and

means whereby said plate and the saddle-body-forming portion of the cap are attached centrally to the carline.

2. The combination, with the two laterally spaced side plates of a car-roof-frame, a carline extending between and connected to the side plates, and two roofing-sheets extending from over the carline laterally of the carline in opposite directions and also extending longitudinally of the carline, each roofing-sheet having an upwardly projecting side member arranged over and extending longitudinally of the carline, said side members of the roofing-sheets being spaced apart from top to bottom of said side members and terminating in laterally and outwardly projecting flanges, of a cap covering and extending longitudinally of said flanges, which cap has its central portion offset upwardly and instrumental in forming a running-board-saddle, said cap being offset downwardly between said central portion and the ends of the cap, and means whereby said cap is attached to the carline between the downwardly offset portions of the cap.

3. The combination, with the two laterally spaced side plates of a car-roof-frame, a carline extending between and connected to the side plates, and two roofing-sheets extending from over the carline laterally of the carline in opposite directions and also extending longitudinally of the carline, each roofing-sheet having an upwardly projecting side member arranged over and extending longitudinally of the carline, said side members of the roofing-sheets being spaced apart from top to bottom of said side members and terminating each in a laterally and outwardly projecting flange, of a cap covering and extending longitudinally of said flanged side members, which cap is contoured centrally between its ends to form the body of a running-board-saddle, said cap being offset downwardly between its saddle-body-forming central portion and the ends of the cap, the downwardly offset portions of the cap being arranged between and forming lateral abutments for the upper portions of the aforesaid side members of the roofing-sheets; a substantially horizontally arranged plate forming the top of the aforesaid saddle and mounted on the saddle-body-forming portion of the cap, and means whereby said plate and the saddle-body-forming portion of the cap are attached to the carline, each roofing-sheet being free to move under the downwardly offset portions of the cap toward and from the other roofing-sheet but being confined at the flange of its aforesaid side member between the adjacent side of the cap and said downwardly offset portions of the cap.

4. The combination, with the two laterally spaced side plates of a car-roof-frame, a car-

line extending between and connected to the side plates, and two roofing-sheets extending from over the carline laterally of the carline in opposite directions and also extending longitudinally of the carline, each roofing-sheet having an upwardly projecting side member arranged over and extending longitudinally of the carline, said side members of the roofing-sheets being spaced apart from top to bottom of said side members, of a cap covering and extending longitudinally of said side members of the roofing-sheets, which cap has a substantially horizontally arranged top portion centrally between the ends of the cap, said cap being offset downwardly between said top portion and the ends of the cap, the downwardly offset portions of the cap being arranged between and forming lateral abutments for the upper portions of the aforesaid side members of the roofing-sheets; a substantially horizontally arranged plate mounted on said top portion of the cap, and means whereby said plate and the cap are attached to the carline centrally between the ends of the carline.

5. The combination, with the two laterally spaced side plates of a car-roof-frame, a carline comprising a trough which bridges the space between and is connected to the side plates, said trough being provided at the top with two laterally and outwardly projecting flanges arranged at opposite sides respectively and extending longitudinally of the trough, and two roofing-sheets extending from over opposite flanges respectively laterally of the trough in opposite directions and also extending longitudinally of the trough, each roofing-sheet terminating in an upwardly projecting side member arranged between the sides and extending longitudinally of the trough, of a cap covering and extending longitudinally of said side members of the roofing-sheets, which cap has downwardly offset portions spaced longitudinally of the cap and arranged between the upper portions of the aforesaid side members of the roofing-sheets, said offset portions being rounded at the bottom of their sides, the cap being attached to the carline between the ends of the carline.

6. The combination, with the two laterally spaced side plates of a car-roof-frame, a carline comprising a trough which bridges the space between and is connected to the side plates, said trough being provided at the top with two laterally and outwardly projecting flanges arranged at opposite sides respectively and extending longitudinally of the trough, and two roofing-sheets extending from over opposite flanges respectively laterally of the trough in opposite directions and also extending longitudinally of the trough, each roofing-sheet having portions depending into the trough

and terminating in an upwardly projecting side member arranged between the sides and extending longitudinally of the trough, said side members of the roofing-sheets being spaced apart from top to bottom of said side members, of a cap covering and extending longitudinally of said side members of the roofing-sheets, which cap has downwardly offset portions spaced longitudinally of the cap and arranged between and forming lateral abutments for the upper portions of said side members of the roofing-sheets, the cap being attached to the carline between the ends of the carline.

7. The combination, with the two laterally spaced side plates of a car-roof-frame, a carline extending between and connected to the side plates, and two roofing-sheets extending from over the carline laterally of the carline in opposite directions and also extending longitudinally of the carline, each roofing-sheet having an upwardly projecting side member extending longitudinally of the carline, said side members of the roofing-sheets being spaced apart, of a cap covering and extending longitudinally of said side members of the roofing-sheets and having a substantially horizontally arranged top portion extending over said side members of the roofing-sheets and arranged centrally between the ends of the carline, which cap between said portion and the ends of the cap has downwardly offset portions arranged within the upper portion of the space between and forming lateral abutments for said side members of the roofing-sheets, a substantially horizontally arranged plate mounted on the aforesaid top portion of the cap, and an upright member arranged centrally between said side members of the roofing-sheets and centrally between said offset portions of the cap and connected to the carline and provided above said side members of the roofing-sheets with an upwardly facing shoulder arranged internally of the cap and next below and forming a seat for said top portion of the cap, said shouldered member projecting upwardly above the cap and upwardly through the aforesaid plate, said plate and the cap being clamped to said shoulder.

8. The combination, with the two laterally spaced side plates of a car-roof-frame; a carline extending between and connected to the side plates; two roofing-sheets extending from over the carline laterally of the carline in opposite directions and also extending longitudinally of the carline, each roofing-sheet having an upwardly projecting side member arranged over and extending longitudinally of the carline, said side members of the roofing-sheets being spaced apart, and a member arranged centrally between said side members of the roofing-sheets and centrally between the

ends of and connected to the carline and provided above said side members of the roofing-sheets with an upwardly facing shoulder and projecting above said shoulder, of a cap covering and extending longitudinally of said side members of the roofing-sheets and having a top portion extending over and seated on said shoulder, which cap has two downwardly offset portions arranged between said top portions and opposite ends respectively of the cap, said offset portions being spaced from the aforesaid shouldered member and depending into the space between the aforesaid side members of the roofing-sheets, and a substantially horizontally arranged plate mounted on said top portion of the cap, said plate and the cap being clamped to said shoulder.

9. The combination, with the two laterally spaced side plates; a carline comprising a trough which extends between and is connected to the side plates; two roofing-sheets extending over the carline and laterally of the carline in opposite directions and also longitudinally of the carline; a cap covering adjacent portions of said roofing-sheets and extending longitudinally of the carline, and a substantially horizontal plate arranged over the cap centrally between the ends of the cap, of a brace arranged substantially horizontally within and extending from side to side of the carline-trough; a rivet extending endwise through said brace and through the sides of said trough, and a member embracing said brace and provided with a shoulder forming a seat for a portion of the cap, said shouldered member projecting upwardly above the cap and through and above the aforesaid plate, said plate and said portion of the cap being clamped to said shoulder.

10. In a car-roof, two laterally spaced side plates; a carline comprising a trough which extends between and is connected to the side plates; two roofing-sheets extending over the carline and laterally of the carline in opposite directions and also longitudinally of the carline; a cap covering adjacent portions of said roofing-sheets and extending longitudinally of the carline; a substantially horizontal plate arranged over the cap centrally between the ends of the cap; a brace arranged substantially horizontally within and extending from side to side of the carline-trough; a rivet extending endwise through said brace and through the sides of said trough, and an eye-bolt embracing said brace and having its shank projecting upwardly above the cap and through and above the aforesaid plate and provided with a shoulder forming a seat for a portion of the cap, and a nut screwed onto said shank at the upper side of said plate.

11. The combination, with the two laterally spaced side plates; a carline compris-

ing a trough which extends between and is connected to the side plates; two roofing-sheets extending over the carline and laterally of the carline in opposite directions and also longitudinally of the carline, and a saddle extending over adjacent portions of said roofing-sheets, of a brace arranged within and extending from side to side of the carline-trough; a rivet extending endwise through said brace and through the sides of said trough, and a member embracing said brace and provided with a shoulder forming a seat for the aforesaid saddle.

12. In a car-roof, two laterally spaced side plates; a carline comprising a trough which extends between and is connected to the side plates; two roofing-sheets extending over the carline and laterally of the carline in opposite directions and also longitudinally of the carline, and a saddle extending over adjacent portions of said roofing-sheets, of a brace arranged within and extending from side to side of the carline-trough; a rivet extending endwise through said brace and through the sides of said trough, and an eye-bolt embracing said brace and having its shank projecting upwardly above the aforesaid saddle and provided with a shoulder forming a seat for said saddle.

13. The combination, with the two laterally spaced side plates; a carline comprising a trough which extends between and is connected to the side plates; two roofing-sheets extending from over the carline laterally of the carline in opposite directions and also extending longitudinally of the carline, each roofing-sheet having an upwardly projecting side member arranged over and extending longitudinally of the carline; a cap covering and extending longitudinally of said side members of the roofing-sheets, and a substantially horizontal plate arranged over the cap centrally between the ends of the cap, of a tubular brace arranged substantially horizontally within and extending from side to side of the carline-trough; a rivet extending endwise through said brace and through the sides of said trough, and a member embracing said brace and provided with a shoulder forming a seat for a portion of the cap, said shouldered member projecting upwardly above the cap and through and above the aforesaid plate, said plate and said portion of the cap being clamped to said shoulder.

14. The combination, with the two laterally spaced side plates; a carline comprising a trough which extends between and is connected to the side plates, and two roofing-sheets extending from over the carline laterally of the carline in opposite directions and also extending longitudinally of the carline, each roofing-sheet having an upwardly projecting side member arranged over and

extending longitudinally of the carline, and a cap covering and extending longitudinally of said side members of the roofing-sheets and having a substantially horizontally arranged top portion arranged centrally between the ends of the cap, of a tubular brace arranged substantially horizontally within and extending from side to side of the carline-trough; a rivet extending endwise through said brace and through the side of said trough, and a member embracing said brace centrally between the sides of the trough and provided with a shoulder forming a seat for the aforesaid top portion of the cap, said top portion of the cap being clamped to said shoulder.

15. In a car-roof, two laterally spaced side plates; a carline comprising a trough which extends between and is connected to the side plates; two roofing-sheets extending from over the carline laterally of the carline in opposite directions and also extending longitudinally of the carline, each roofing-sheet having an upwardly projecting side member arranged over and extending longitudinally of the carline; a cap covering and extending longitudinally of said side members; a substantially horizontal plate arranged over the cap centrally between the ends of the cap; a tubular brace arranged substantially horizontally within and extending from side to side of the carline-trough; a rivet extending endwise through said brace and through the sides of said trough, and an eye-bolt embracing said brace and having its shank projecting upwardly above the cap and through and above the aforesaid plate and provided with a shoulder forming a seat for a portion of the cap, and a nut screwed onto said shank at the upper side of said plate.

16. In a car-roof, two laterally spaced side plates; a carline comprising a trough which extends between and is connected to the side plates, which trough has its sides diverging upwardly, each side of the trough centrally between the ends of the trough having a laterally and outwardly offset portion forming a recess which has a laterally inwardly facing wall arranged directly opposite the corresponding wall of the recess in the opposite side of the trough; two roofing-sheets extending from over the carline laterally of the carline in opposite directions and also extending longitudinally of the carline, each roofing-sheet having an upwardly projecting side member arranged over and extending longitudinally of the carline; a cap covering and extending longitudinally of the said side members, which cap centrally between the ends of the carline has a substantially horizontally arranged top portion; a substantially horizontally arranged plate arranged over and next to said portion of the cap centrally between the ends of the cap; a tubular brace extending between and to

the aforesaid walls; a rivet extending end-wise through said brace and through the sides of the trough, and an upright eye-bolt having its eye embracing said brace and provided with a shoulder arranged next below and forming a seat for the aforesaid top portion of the cap, said bolt having its shank projecting upwardly above the cap and through and above the aforesaid plate, and a nut screwed onto said bolt at the upper side of said plate.

17. In a car-roof, two laterally spaced side plates; a carline which extends between and is connected to the side plates; two roofing-sheets extending from over the carline laterally of the carline in opposite directions and also extending longitudinally of the carline, each roofing-sheet having an up-

wardly projecting side member arranged over and extending longitudinally of the carline; a cap covering and extending longitudinally of said side members and attached to the carline centrally between the ends of the carline, and a substantially horizontal plate arranged over the cap centrally between the ends of the cap and having portions thereof struck downwardly at the sides and externally of the cap.

Signed by us at Cleveland, Ohio, this 30th day of July, 1912.

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Witnesses:

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