

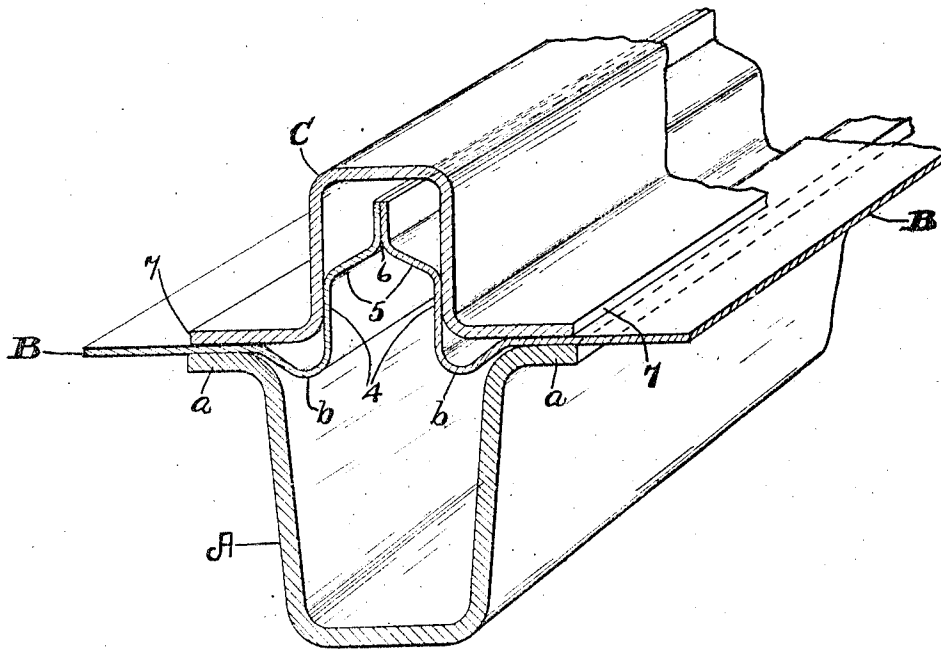
W. S. BIDLE & J. A. COSTELLO.

CAR ROOF.

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1,053,558.

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Witnesses:
H. J. Gettins.
B. C. Brown.

Inventor
William S. Bidle
and Joseph A. Costello
By *[Signature]*
their Attorneys.

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.

1,053,558.

Specification of Letters Patent.

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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.

Our invention relates to improvements in car-roofs, and pertains more especially to an improved car-roof construction for a railway-car to be used in the shipment of freight.

One object of this invention is not only to employ a carline which comprises a trough extending transversely of the car-roof and employed in supporting two metal roofing-sheets and to have said roofing-sheets extend from over said carline laterally of said carline in opposite directions and connected together by a cap, but to have adjacent portions of said roofing-sheets so contoured in cross-section and relatively arranged as to permit expansion and contraction of said roofing-sheets longitudinally of the car-roof.

Another object is to form such joints between said cap and upwardly projecting spaced lower portions of side members of said roofing-sheets and such a joint between said roofing-sheets that passage of water to the space between said lower portions of said side members from between the bottom of the cap and the roofing-sheets is adequately obstructed.

Another object is to have said side members of the roofing-sheets so contoured in cross-section that the roofing-sheets can be pressed with facility into the shape required to form said side members.

Another object is to avoid flooding of the trough of said carline and thereby prevent the passage of water from said carline-trough at the top of the sides of the carline-trough into a car provided with our improved roof.

With these objects in view, and to the end of attaining other advantages hereinafter appearing, this invention consists in certain features of construction, and combinations and arrangement of parts, hereinafter de-

scribed, pointed out in the claims, and illustrated in the accompanying drawing which is a view partly in section and partly in perspective of a portion of a car-roof embodying our invention.

Referring to said drawings, A indicates a steel trough forming a carline of our improved car-roof. The application of carlines in the construction of car-roofs is too well known in the art to require illustration and description in this specification. The trough A is adapted to extend between, and be connected to the side plates (not shown) of a car-roof. Said trough is provided at its top and externally with two laterally and outwardly projecting flanges *a* and *a* which are arranged at opposite sides respectively and extend longitudinally of the trough. Two metal roofing-sheets B and B rest on opposite flanges *a* and *a* respectively. Said roofing-sheets extend from over the carline-trough A laterally of said trough in opposite directions. Between the flanges *a* and *a*,—that is, between the sides of the carline-trough A, each of the roofing-sheets B has a trough-shaped portion *b* which is shown depending into and extends longitudinally of the carline-trough, and said trough-shaped portions of said roofing-sheets are shown spaced apart and from the sides of said carline-trough. Adjacent sides of said trough-forming portions *b* of said roofing-sheets are extended upwardly and form upwardly projecting side members of said roofing-sheets, and the lower portions 4 of said side members of said roofing-sheets are spaced apart transversely of the carline-trough A and arranged substantially vertically and extend, as at 5, a suitable distance above the trough-forming portion *b* of said roofing-sheets laterally and upwardly toward and into contact with each other, as at 6, and project substantially vertically upwardly and abut and press laterally against each other where said side members of said roofing-sheets make contact with each other. It will be observed that said side members of said roofing-sheets, being formed by adjacent sides of the troughs *b* of said roofing-sheets and by the upward extension of said sides of said troughs, project upwardly from within the carline-trough A so as to insure the dripping into said carline-trough of any water having access to and running down the opposing surfaces of the lower portions

4 of said side members of said roofing-sheets. It will be observed also that the illustrated contour and relative arrangement of said side members of said roofing-sheets permit expansion and contraction of said roofing-sheets longitudinally of the car-roof without being interfered with by the joint formed between the upper ends of said side members. A metal cap C, which is inverted-U-shaped in cross-section, covers the aforesaid upwardly projecting side members of said roofing-sheets and overlaps and presses against the outer sides of the lower portions 4 of said side members and holds said side members together at their upper ends, and said cap is provided externally with flanges 7 projecting laterally and outwardly across the aforesaid trough-forming portions b of said roofing-sheets and overlapping the bodies of said roofing-sheets over the flanges of the carline-trough A without interfering with the expansion and contraction of said roofing-sheets.

By the construction hereinbefore described it will be observed that a desirable joint is not only formed between the upper end-portions of the aforesaid upwardly projecting side members of the roofing-sheets B centrally between the sides of the cap but between the lower portion 4 of each of said side members and the cap C and that the joints formed between the cap and the lower portions 4 of said side members are arranged at the sides of the cap wholly below the joint formed between the upper ends of said side members so that any water driven or forced next under the flanges of said cap and received by the troughs b employed in conducting off water, would encounter enough obstruction before it could enter the carline-trough A to render flooding of said carline-trough impossible. It will also be observed that the space formed between each roofing-sheet B and the cap C at the bottom of said cap by the passageway formed in and by the trough b of said roofing-sheet is arranged to receive water from between the adjacent flange 7 of said cap and said roofing-sheet, and any body of water filling said space will obviously retard the passage of water upwardly between said cap and the contiguous portion 4 of said roofing-sheet, and we would here remark that our invention broadly embraces also such relative contour and arrangement of said roofing-sheets and said cap at the bottom of the cap that water-receiving passageways or spaces are formed adjacent the lower ends of the aforesaid side members of said roofing-sheets between the bottom of the cap and said roofing-sheets and it will be observed that said passageways or spaces are arranged, as desired, below the joints formed between the cap and said side members of said roofing-sheets and spaced from

the longitudinal edges of the flanges of the cap.

What we claim is:—

1. The combination, with a carline comprising a trough, of two metal roofing-sheets extending from over the carline laterally of the carline in opposite directions, each of said roofing-sheets having an upwardly projecting side member which is arranged between the sides and extends above and longitudinally of the carline-trough, the lower portions of said side members of said roofing-sheets being arranged substantially vertically and spaced apart transversely of the carline, and said side members extending laterally and upwardly toward and into contact with each other above their aforesaid lower portions and over the carline-trough, and a cap covering said side members and holding the latter in contact with each other above said lower portions.

2. The combination, with a carline comprising a trough, of two metal roofing-sheets extending from over the carline laterally of the carline in opposite directions, each of said roofing-sheets having an upwardly projecting side member which extends above and longitudinally of the carline, the lower portions of said side members of said roofing-sheets being spaced apart transversely of the carline and said side members extending laterally toward and into contact with each other above their said lower portions and over the carline-trough and projecting substantially vertically upwardly where said side members make contact with each other, and a cap covering said side members and holding them in contact with each other.

3. The combination, with a carline comprising a trough of two metal roofing-sheets extending from over the carline laterally of the carline in opposite directions, each of said roofing-sheets having an upwardly projecting side member which is arranged between the sides and extends longitudinally of the carline and projects upwardly from within the carline-trough, the lower portions of said side members of said roofing-sheets being spaced apart transversely of the carline and said side members extending laterally toward and into contact with each other above their said lower portions and over the carline-trough and projecting upwardly where said side members make contact with each other, and a cap covering said side members and holding them in contact with each other.

4. The combination, with a trough extending transversely of a car-roof, of two metal roofing-sheets extending over said trough and laterally of the trough in opposite directions, each of said roofing-sheets being provided adjacent said trough with an upwardly projecting side member extending

longitudinally of the trough, the lower portions of said side members of said roofing-sheets being spaced apart transversely of the trough and said side members of said roofing-sheets extending toward each other above their aforesaid lower portions and over the aforesaid trough, and a cap covering said side members of the roofing-sheets and having its sides arranged at and opposite the aforesaid lower portions of said side members.

5. The combination, with a trough extending transversely of a car-roof, of two metal roofing-sheets extending over said trough and laterally of the trough in opposite directions, each of said roofing-sheets being provided adjacent said trough with an upwardly projecting side member extending longitudinally of the trough, the lower portions of said side members of said roofing-sheets being arranged substantially vertically and spaced apart transversely of the trough and said side members of said roofing-sheets approaching each other above said substantially vertically arranged portions, and a cap covering said side members of the roofing-sheets and having its sides arranged opposite the aforesaid lower portions of said side members.

6. The combination, with a trough extending transversely of a car-roof, of two metal roofing-sheets extending over said trough and laterally of the trough in opposite directions, each of said roofing-sheets being provided adjacent said trough with an upwardly projecting side member extending longitudinally of the trough, the lower portions of said side members of said roofing-sheets being spaced apart transversely of the trough and said side members of said roofing-sheets approaching each other above their aforesaid lower portions and projecting substantially vertically upwardly at the termination of their approach, and a cap covering said side members of the roofing-sheets and having its sides arranged opposite the aforesaid lower portions of said side members.

7. The combination, with a carline comprising a trough, of two metal roofing-sheets extending over the carline and laterally of the carline in opposite directions, each of said roofing-sheets being provided at the top of the carline with an upwardly projecting side member extending longitudinally of the carline, the lower portions of said side members of the roofing-sheets being spaced apart transversely of the carline and extending laterally toward and into contact with each other above their said lower portions and over the carline-trough, and a cap covering said side members of the roofing-sheets and forming joints with the aforesaid lower portions of said side members, the roofing-sheets and the cap being con-

toured and relatively arranged to effect the formation, below the last-mentioned joints, of passageways extending longitudinally of the cap.

8. The combination, with a trough extending transversely of a car-roof, of two metal roofing-sheets extending over said trough and laterally of the trough in opposite directions, each of said roofing-sheets being provided adjacent said trough with an upwardly projecting side member extending longitudinally of the trough, the lower portions of said side members of said roofing-sheets being spaced apart transversely of said trough and said side members approaching each other above their said lower portions and over said trough, and a cap covering said side members of said roofing-sheets and having its sides arranged at said lower portions of the roofing-sheets, the roofing-sheets and the cap being contoured and relatively arranged adjacent the lower ends of said portions of the roofing-sheets to form spaces between the cap and said ends of said portions of the roofing-sheets.

9. The combination, with a trough extending transversely of a car-roof, of two metal roofing-sheets extending over said trough and laterally of said trough in opposite directions, each of said roofing-sheets being provided adjacent said trough with an upwardly projecting side member extending longitudinally of said trough, the lower portions of said side members of said roofing-sheets being spaced apart transversely of said trough and said side members extending laterally toward and into contact with each other above their said lower portions and over said trough, and a cap covering said side members of said roofing-sheets and forming joints with the aforesaid lower portions of said side members, each roofing-sheet and the cap being contoured and relatively arranged adjacent the lower ends of said side members of the roofing-sheets to form a space between the cap and said side members at said ends of said side members.

10. The combination, with a carline comprising a trough, of two metal roofing-sheets extending over the carline and laterally of the carline in opposite directions, each of said roofing-sheets being provided at the top of the carline with an upwardly projecting side member extending longitudinally of the carline, and a cap covering said side members of the roofing-sheets, said side members of the roofing-sheets meeting and forming a joint arranged over the carline and centrally between the sides of the cap, and said cap and the roofing-sheets being contoured to form joints between the cap and the roofing-sheets at the sides of the cap but below the first-mentioned joint.

11. In car-roof-construction, two adjacent

metal roofing-sheets having trough-forming portions extending transversely of a car-roof, and a cap covering adjacent portions of said roofing-sheets and extending over and across the aforesaid trough-forming portions and being inverted-U-shaped in cross-section, the roofing-sheets projecting upwardly at the inner surfaces of the sides of the cap and thence approaching each other internally of the cap and terminating substantially centrally between the sides of the cap.

12. The combination, with a trough extending transversely of a car-roof, of two metal roofing-sheets extending over said trough and laterally of the trough in opposite directions and having trough-forming portions extending longitudinally of the first-mentioned trough, and a cap covering adjacent portions of said roofing-sheets and extending over and across the aforesaid trough-forming portions of the roofing-sheets, said roofing-sheets projecting upwardly at the inner surfaces of the sides of the cap and thence approaching each other internally of the cap and terminating over the first-mentioned trough.

13. The combination, with a trough extending transversely of a car-roof, of two metal roofing-sheets extending over said trough and laterally of the trough in opposite directions and having trough-forming portions extending longitudinally of the first-mentioned trough, and a cap covering adjacent portions of said roofing-sheets and extending over and across said trough-forming portions of the roofing-sheets, said cap and the roofing-sheets being relatively contoured and arranged to form joints at the sides of but above the bottom of the cap, and the roofing-sheets approaching each other above and terminating between said joints.

14. In car-roof-construction, two adjacent metal roofing-sheets, each roofing-sheet being provided adjacent the other roofing-sheet with an upwardly projecting side member extending transversely of the car-roof, and a cap covering said side members of said roofing-sheets and having its sides arranged opposite said side members and provided externally with two laterally and outwardly projecting flanges arranged at opposite sides respectively of the cap at the bottom of the cap, there being a passageway formed at the bottom of each side of the cap by and between said cap and the roofing-sheet adjacent said side of the cap and said passage-way extending along said bottom and under the adjacent flange of the cap but spaced from the longitudinal edge of said flange.

15. The combination, with a carline comprising a trough, of two metal roofing-sheets extending over the carline and laterally of the carline in opposite directions, each of said roofing-sheets having a trough-forming portion extending longitudinally of the carline-trough between the sides of the carline-trough, adjacent sides of said trough-forming portions of the roofing-sheets being extended upwardly and forming upwardly projecting side members of the roofing-sheets, and a cap covering said side members of the roofing-sheets and having flanges projecting laterally across the aforesaid trough-shaped portions of the roofing-sheets.

Signed by us at Cleveland, Ohio, this 20th day of August, 1912.

WILLIAM S. BIDLE.
JOSEPH A. COSTELLO.

Witnesses:

B. C. BROWN,
V. C. LYNCH.