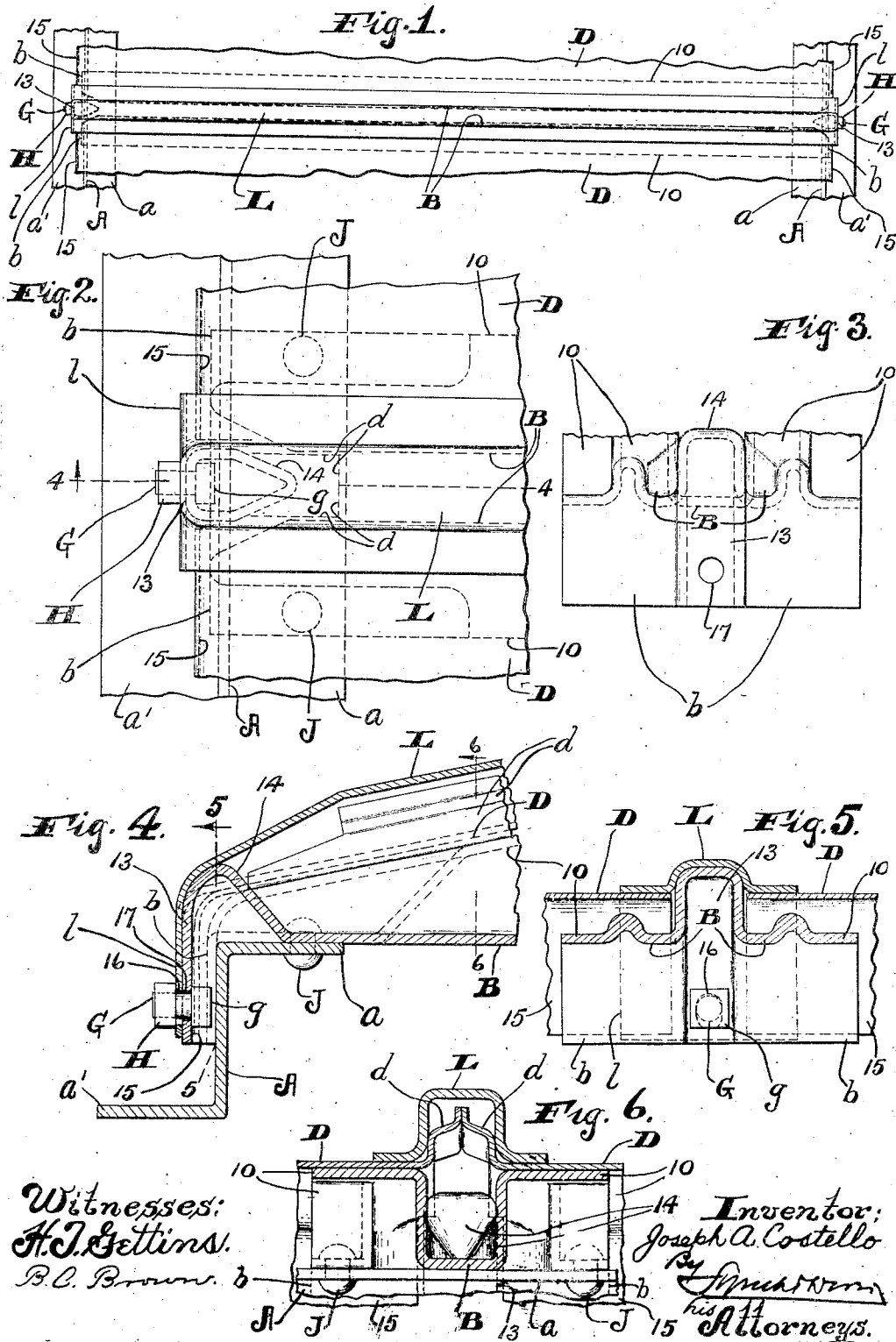


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CAR ROOF CONSTRUCTION.
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1,056,505.

Patented Mar. 18, 1913.



Witnesses:
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UNITED STATES PATENT OFFICE.

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CAR-ROOF CONSTRUCTION.

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To all whom it may concern:

Be it known that I, JOSEPH A. COSTELLO, a citizen of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Car-Roof Construction; and I 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-roof-construction more especially designed for a freight car and comprising a framework which consists, in the main, of the two laterally spaced side plates and the carlines extending between and secured to said side plates, and is covered by metal roofing-sheets and metal roofing-caps.

The primary object of this invention is to inexpensively, conveniently and reliably secure the roofing-caps to the carlines independently of the side plates.

Another object is not only to provide each end of each carline of the framework of the car-roof with a baffle-member arranged to prevent the passage of water from the outer side of one to the inner side of the other of two roofing-sheets arranged at opposite sides of said baffle-member, but to secure the roofing-cap to said baffle-member.

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 relative arrangement 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 my invention. Fig. 2 is an enlarged view of a portion of Fig. 1. Fig. 3 is an outer end view of an end-portion of a carline employed in carrying out my invention. Fig. 4 is a vertical section on line 4—4, Fig. 2, looking in the direction indicated by the arrow. Fig. 5 is a section on line 5—5, Fig. 4, looking outwardly. Fig. 6 is a vertical section on line 6—6, Fig. 4, looking outwardly. Figs. 2, 3, 4, 5, and 6 are drawn on a larger scale than Fig. 1.

Referring to Fig. 1 of the drawings, A and A indicate the two laterally spaced metal side plates of the framework of a car-

roof embodying my invention. Said side plates are applied in any approved manner and extend longitudinally of the car-roof. Each side plate is provided at its top with a laterally and inwardly projecting substantially horizontally arranged flange *a* which extends longitudinally of said side plate, and said side plate is shown provided at the bottom with a laterally and outwardly projecting flange *a'*. The side plates A are shown connected or tied together by a carline composed of a steel-blank pressed into the shape required, which carline comprises a trough B which is shown bridging the space between and extends over and transversely of said side plates and rests on the upper flange *a* of each side plate, as shown in Fig. 4. The carline is provided at the outer side of each side plate A with a downwardly projecting end flange *b* which extends transversely of the carline and abuts against or overlaps the outer side of said side plate.

The carline-trough B is provided at its top with two laterally and outwardly projecting side flanges 10 and 10 which are arranged at opposite sides of the trough and extend between and to the end flanges *b*.

Each end flange *b* is provided at its outer side and centrally between its side edges with a laterally and outwardly offset portion 13 which extends vertically upwardly from the lower extremity of said flange to the bottom of the trough B, and the adjacent end-portion of said bottom is offset upwardly, as at 14, centrally between the sides of the trough. Said offset portion 14 of said bottom connects with the upper end of the offset portion 13 of the adjacent end flange *b*.

Two metal roofing-sheets D and D (see Figs. 1 and 6) rest on opposite flanges 10 and 10 respectively of the carline illustrated. Said roofing-sheets extend over said carline and laterally of the carline in opposite directions and also longitudinally of the carline. Between the flanges 10 and 10,—that is, between the sides of the carline-trough B,—each of the roofing-sheets D has an upwardly projecting flange *d* which extends longitudinally of the carline, and the flanges *d* of said roofing-sheets have their lower portions spaced apart and their upper portions extending into contact with each other, as shown in Fig. 6. The roofing-sheets D extend over and across the tops of the

side plates A, and each roofing-sheet D is provided at the outer side of each side plate with a downwardly projecting end-portion 15 which extends opposite the outer side of the adjacent end flange *b* of the carline. The flanges *d* of said roofing-sheets,—that is, adjacent portions of the roofing-sheets,—are covered by a pressed steel cap L arranged above and extending longitudinally and from end to end of the carline.

The cap L is provided at the outer sides of adjacent downwardly projecting end-portions 15 of the roofing-sheets K with a downwardly projecting end flange *l* which extends opposite said sides of said end-portions of said roofing-sheets and opposite the adjacent end flange *b* of the carline and overlaps the offset portion 13 of said flange of the carline. Each end flange *l* of the cap L (see Fig. 4) is provided in its lower end-portion with a bolt-hole 16 which is spaced from the lower extremity of said flange and arranged opposite the offset portion 13 of the adjacent end flange of the carline. Said bolt-hole registers with a bolt-hole 17 formed in said offset portion of said flange of the carline, and a bolt G has its shank extending through said bolt-holes and beyond the outer side of said flange of the cap and has a head *g* overlapping the inner side of said offset portion of said flange of the carline. Said bolt is arranged at the outer side and wholly externally of the adjacent side plate, and a nut H is screwed onto said bolt at the outer side of said flange of the cap. Said bolt and the engaging nut constitute means removably securing said flange of the cap to said offset portion of said flange of the carline independently of the adjacent side plate, and the bolt-hole 16 in said flange of the cap is large enough to permit springing of said flange of the cap outwardly from the bolt upon the removal of said nut. The offset portion 13 of each end flange of the carline and the contiguous offset portion 14 of the bottom of the carline form a baffle-member arranged centrally between the side edges of said flange and between the adjacent depending end-portions of the roofing-sheets. By the construction hereinbefore described and illustrated it will be observed that the carline is provided at the inner side of each flange *l* of the cap L with a baffle-member projecting toward said flange and arranged centrally between the sides of the carline-trough; that said baffle-member divides the passageway formed by the adjacent end-portion of said trough so that any water drained by said trough through said end-portion of the trough passes off at the sides of said baffle-member; that the cap L is seated on said baffle-member; that adjacent depending end-portions *l* of the roofing-sheets are spaced apart to permit the location of a baffle-member between said roofing-sheets;

that obviously said baffle-member prevents the passage of water, more especially during weaving or racking of the car, from the outer side of the adjacent downwardly projecting end-portion of the roofing-sheet at one side of said baffle-member to the inner side of the adjacent downwardly projecting end-portion of the roofing-sheet at the opposite side of said baffle-member, and that by my invention the cap L is inexpensively, conveniently and reliably attached to the baffle-members of the carline independently of the side plates.

In constructing my improved car-roof, when the carline has been placed in position relative to the side plates and secured to the side plates by any approved means, such, for instance as rivets J, upon the application of the bolts G to the offset portions 13 of the end flanges of the carline before applying the nuts H to said bolts, the cap L is applied, and the flanges *l* of said cap are, in applying the cap, sprung over the shanks of said bolts so as to bring the bolt-hole 16 in each flange of the cap into registry with the bolt-hole 17 in the offset portions 13 of the adjacent end flange of the carline, whereupon the nuts H are applied to the bolts.

What I claim is:—

1. In car-roof construction, the combination, with the two laterally spaced side plates, a carline extending between and secured to the side plates, two metal roofing-sheets extending over the carline and laterally of the carline in opposite directions and also longitudinally of the carline and over the side plates, each roofing-sheet being provided at the outer side of each side plate with a downwardly projecting end-portion, and a metal cap arranged above and extending longitudinally of the carline and covering adjacent portions of the roofing-sheets, which cap is provided at each end with a downwardly projecting flange arranged opposite the outer sides of the adjacent downwardly projecting end-portions of the roofing-sheets, and the carline being provided with a member projecting toward said flange, of means securing said flange and said projecting member of the carline together independently of the adjacent side plate.

2. In car-roof-construction, the combination, with the two laterally spaced side plates; a metal carline extending between and transversely of and secured to the side plates, which carline is provided at the outer side of each side plate with a downwardly projecting end flange; two metal roofing-sheets extending over the carline and laterally of the carline in opposite directions and also longitudinally of the carline and over the side plates, and a metal cap arranged above and extending longitudinally of the

carline and covering adjacent portions of the roofing-sheets, which cap is provided at each end with a downwardly projecting flange arranged opposite the outer side of the adjacent end flange of the carline, of means securing said flange of the cap to the adjacent end flange of the carline independently of the adjacent side plate.

3. In car-roof-construction, the combination, with the two laterally spaced side plates; a metal carline extending between and transversely of and secured to the side plates, which carline is provided at the outer side of each side plate with a downwardly projecting end flange; two metal roofing-sheets extending over the carline and laterally of the carline in opposite directions and also longitudinally of the carline and over the side plates, and a metal cap arranged above and extending longitudinally of the carline and covering adjacent portions of the roofing-sheets, which cap is provided at each end with a downwardly projecting flange arranged opposite the outer side of the adjacent end flange of the carline, and each end flange of the carline being provided with an outwardly offset portion, of means securing said flange of the cap to said offset portion of the adjacent end flange of the carline independently of the adjacent side plate.

4. In car-roof-construction, the combination, with the two laterally spaced side plates; a metal carline extending between and secured to the side plates; two metal roofing-sheets extending over the carline and laterally of the carline in opposite directions and also longitudinally of the carline and over the side plates, each roofing-sheet being provided at the outer side of each side plate with a downwardly projecting end-portion, adjacent downwardly projecting end-portions of said roofing-sheets being spaced apart adjacent the carline, and a metal cap arranged above and extending longitudinally of the carline and covering adjacent portions of the roofing-sheets, which cap is provided at each end with a downwardly projecting flange arranged opposite the outer sides of the adjacent downwardly projecting end-portions of the roofing-sheets, and the carline being provided with a baffle-member arranged between said end-portions of the roofing-sheets, of means securing said flange and the adjacent baffle-member of the carline together independently of the adjacent side plate.

5. In car-roof-construction, the combination, with the two laterally spaced side plates, a metal carline extending between and secured to the side plates, two metal roofing-sheets extending over the carline and laterally of the carline in opposite directions and also longitudinally of the carline and over the side plates, and a metal cap

arranged above and extending longitudinally of the carline and covering adjacent portions of the roofing-sheets, which cap is provided at each end with a downwardly projecting flange having a bolt-hole, the carline being provided at the inner side of said flange with a member which has a bolt-hole which registers with the bolt-hole in said flange, of a bolt having a head overlapping said member of the carline at the inner end of the bolt-hole in said carline-member, which bolt is arranged at the outer side and wholly externally of the adjacent side plate and has its shank extending through said bolt-hole in said carline-member and through the bolt-hole in said flange and beyond the outer side of said flange, and a nut screwed onto said shank at the outer side of said flange.

6. In car-roof-construction, the combination, with the two laterally spaced side plates, a metal carline extending between and secured to the side plates, two metal roofing-sheets extending over the carline and laterally of the carline in opposite directions and also longitudinally of the carline and over the side plates, and a pressed steel cap arranged above and extending longitudinally of the carline and covering adjacent portions of the roofing-sheets, which cap is provided at each end with a downwardly projecting flange having a bolt-hole, and the carline being provided at the inner side of said flange with a projecting member which has a bolt-hole which registers with the bolt-hole in said flange, of a bolt having a head overlapping said projecting member of the carline at the inner end of the bolt-hole in said carline-member, which bolt has its shank extending through said bolt-hole in said carline-member and through the bolt-hole in said flange and beyond the outer side of said flange, and a nut screwed onto said shank at the outer side of said flange, the bolt-hole in said flange being large enough to permit springing of said flange outwardly from the bolt upon the removal of said nut.

7. In car-roof-construction, the combination, with the two laterally spaced side plates; a metal carline extending between and transversely of and secured to the side plates, which carline is provided at the outer side of each side plate with a downwardly projecting end flange arranged transversely of the carline; two metal roofing-sheets extending over the carline and laterally of the carline in opposite directions and also longitudinally of the carline and over the side plates, and a metal cap arranged above and extending longitudinally of the carline and covering adjacent portions of the roofing-sheets, which cap is provided at each end with a downwardly projecting flange arranged opposite the outer side of the adja-

cent end flange of the carline and having a bolt-hole, and each end flange of the carline being provided at the inner side of the adjacent flange of the cap with an outwardly offset portion which has a bolt-hole which registers with the bolt-hole in said flange of the cap, of a bolt having a head at the inner side of said offset portion of said flange of the carline, which bolt has its shank extending through said offset portion and through the bolt-hole in the adjacent flange of the

cap and beyond the outer side of the last-mentioned flange, and a nut screwed onto said shank at the outer side of said flange of the cap.

In testimony whereof, I sign the foregoing specification, in the presence of two witnesses.

JOSEPH A. COSTELLO.

Witnesses:

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