Oct. 3, 1939. W. E. BIKLE 2,174,612

CAR ROOF

Filed Oct. 17, 1938

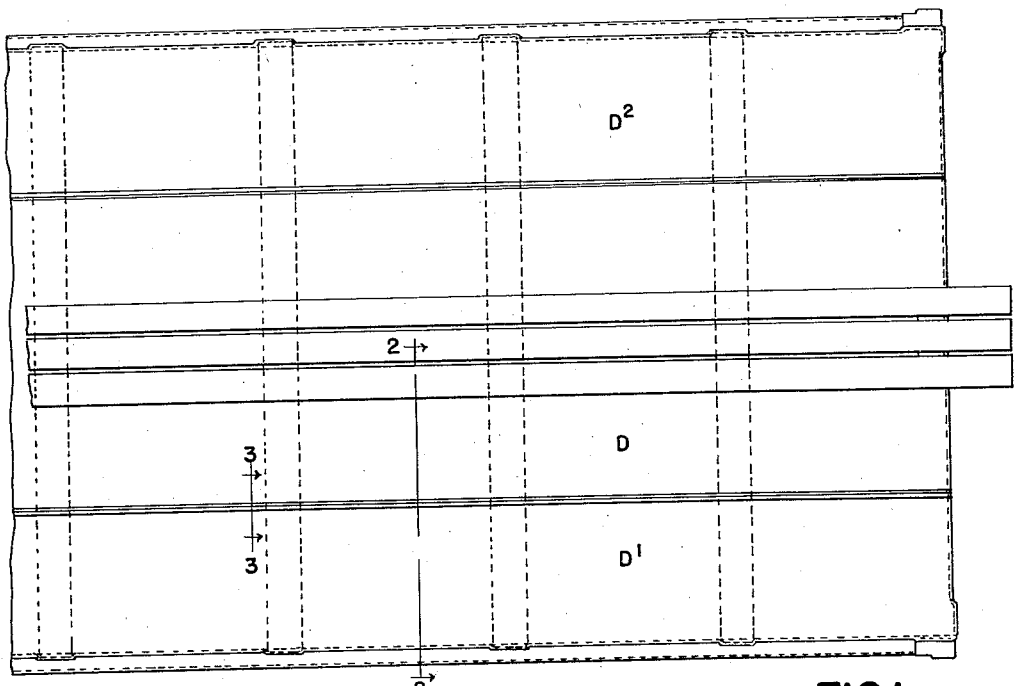


FIG.1.

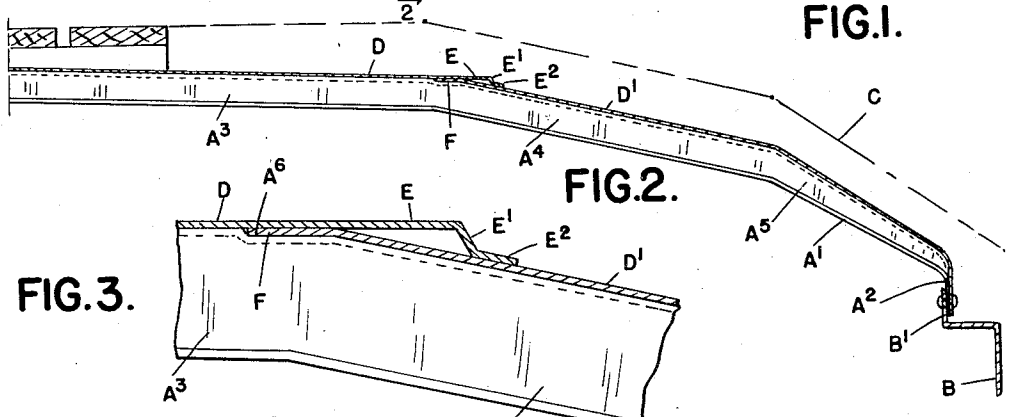


FIG.2.

FIG.3.

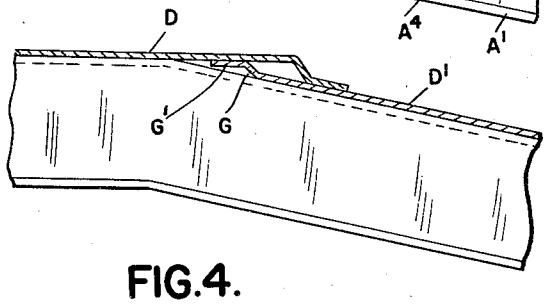


FIG.4.

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Patented Oct. 3, 1939

2,174,612

UNITED STATES PATENT OFFICE

2,174,612

CAR ROOF

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Application October 17, 1938, Serial No. 235,531

4 Claims. (Cl. 108—5.4)

The invention relates to car roofs of the all metallic rigid type including carlines and roofing sheets. It is usual in the construction of this type of roof to extend the roofing sheets transversely of the roof between adjacent carlines and to fashion the marginal portions for engagement with said carlines. One reason for this construction is that standard widths of rolled sheets are sufficient for the purpose whereas sheets of a width corresponding to the width of the car roof are not at present commercially available. On the other hand, there is nothing to definitely limit the length to which sheets may be rolled so that if desired this might correspond to the length of the car.

It is the object of the present invention to obtain a construction of car roof in which the roofing sheets may be extended longitudinally of the roof to cover a series of carlines or even to extend the full length of the car. While this necessitates the use of a plurality of sheets to cover the entire width of the car, I have deviced a construction in which this feature is advantageous and further contributes to the strength and rigidity of the structure. The invention therefore consists in the novel construction as hereinafter set forth.

In the drawing:

Figure 1 is a plan view of the roof of my improved construction;

Figure 2 is a cross section through one-half of the car taken on the line 2—2 of Figure 1;

Figure 3 is an enlarged section on line 3—3 of Figure 1; and

Figure 4 is a similar view of a slightly modified construction.

The carlines A may be of any suitable construction, such for instance as inverted channels having laterally extending foot flanges A'. At the eaves these carlines are suitably attached to the side plates B of the car frame and as shown are provided with downturned portions A^2 which are riveted to upstanding flanges B' of the plates.

In the construction of car roofs of this type the transverse contour is to some extent determined by convenience in the fashioning of the roofing sheets which conform thereto. Thus, with sheets having offset marginal portions any departure from a plane requires the use of expensive dies, as well as subjecting the metal to drawing or upsetting stresses. With my improved construction this difficulty is eliminated and consequently a contour may be selected which is most advantageous in securing the greatest internal storage capacity while remaining within the external clearance diagram. Thus, as specifically illustrated, the carlines A quite closely conform to the clearance diagram indicated at C and include portions A^3 adjacent to and upon opposite sides of the ridge which are of comparatively slight downward pitch; portions A^4 adjacent to the portions A^3 of somewhat greater pitch; and portions A^5 extending from the portions A^4 to the eaves and of still greater pitch.

As above stated, the roofing sheets extend longitudinally of the roof and are formed of a plurality of sections. These as shown include a central section D and sections D' and D^2 on opposite sides thereof. The section D conforms generally to the shape of the portion A^3 of the carlines, while the portions D' and D^2 conform to the shape of the portions A^4 and A^5 and also the downturned portion A^2. As the cross section is the same throughout the length of the sheet it can be readily fashioned by rolling, thereby avoiding the necessity of using dies. The adjacent marginal portions of these sections are overlapped, but instead of being exactly parallel to each other they are extended for a short distance respectively in the planes of the carline portions A^3 and A^4 and are then bent into contact. As illustrated in Figures 2 and 3, the section D is extended outward beyond the first point of contact with the section D' as indicated at E, and is then bent downward at E' to contact with the section D' being provided with a flange E^2 parallel thereto. The section D' continues upward in its original plane to its point of contact with the section D and then is bent to form a flange F parallel to said section. The flanges E and F are then welded to the portions adjacent thereto, thereby forming a hollow longitudinally extending beam which imparts rigidity to the structure. It will be noted that such structure does not form any obstruction to the drainage of water off from the roof, as the portion E is in the same plane as the portion D and the portions E' and E^2 are bent downward.

With the construction just described shown in Figure 3 the carline A is formed with a slightly depressed portion A^6 for receiving the flange F and permitting the section D to rest upon the portion A^3. In the modified construction illustrated in Figure 4, this depressed portion is omitted and the section D' is formed with an upturned portion G and flange G' lying within the space between the planes of the portions D and D'. This still forms the hollow beam which

functions as a purline and imparts rigidity to the structure. The construction as above described can be manufactured at relatively low cost inasmuch as the roofing sheets are originally rolled to the desired cross section and require no further fashioning. Thus the only labor required in assembly is the welding of the seams; attachment to the carlines preferably by spot-welding, and the riveting or otherwise securing the downturned portions to the side plates of the car frame. If desired, the entire roof including the carlines may be assembled off the car and subsequently attached thereto.

What I claim as my invention is:

1. A car roof comprising a series of carlines and a plurality of roofing sheets extending over said carlines longitudinally of the car and having non-parallel overlapping portions marginally welded to each other to form a hollow beam.

2. A car roof comprising a series of carlines fashioned to substantially the desired cross sectional contour of the roof and a plurality of roofing sheets extending over said carlines longitudinally of the car and of a substantially corresponding contour, said roofing sheets having spaced overlapping portions marginally welded to each other and forming a hollow truss or beam extending longitudinally of the car.

3. A car roof comprising a series of carlines having the portions thereof adjacent the eaves fashioned to provide substantially maximum internal capacity within prescribed external clearance and also having adjacent portions of different angular pitch, and a plurality of roofing sheets extending over said carlines longitudinally of the car and substantially conforming to the contour of said carlines, said roofing sheets having adjacent overlapping portions which are respectively in the planes of the differently pitched portions of said carlines and terminate in contacting parallel marginal portions welded to each other thereby forming a hollow beam extending longitudinally of the car without obstruction to the roof pitch.

4. A car roof comprising a series of carlines having the portions thereof adjacent to the eaves fashioned to a curve providing substantially maximum internal capacity within prescribed external clearance, and a plurality of roofing sheets extending over said series of carlines longitudinally of the car, said sheets being rolled to a cross sectional contour corresponding to the contour of the carlines the adjacent edges of said sheets having spaced overlapping portions marginally welded to each other to form a hollow truss or beam extending ongitudinally of the car and said sheets being also welded to the carlines.

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