

March 17, 1936.

C. D. BONSALL

2,034,379

CAR ROOF

Filed June 22, 1935

Fig. 1.

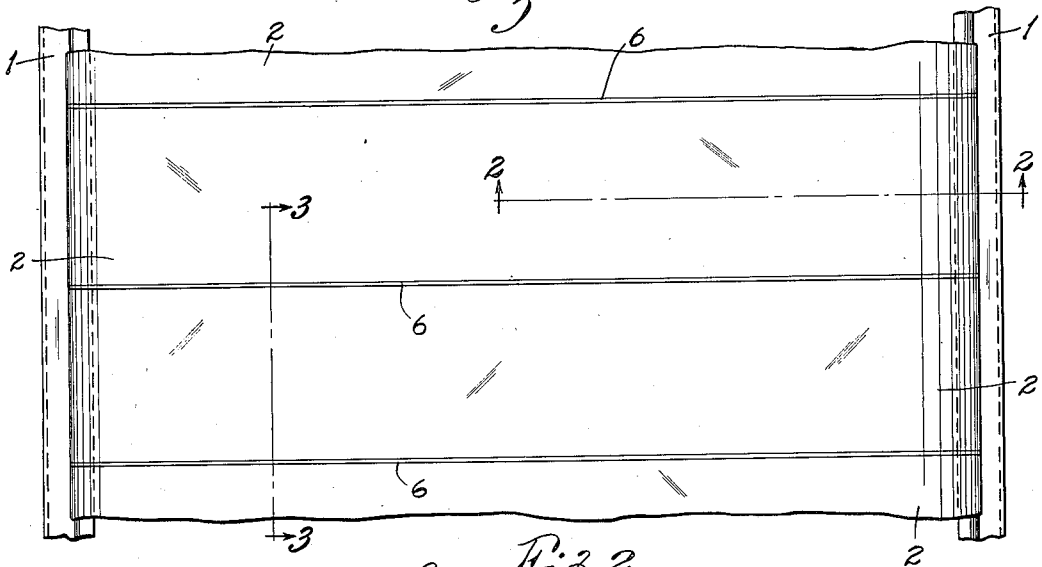


Fig. 2.

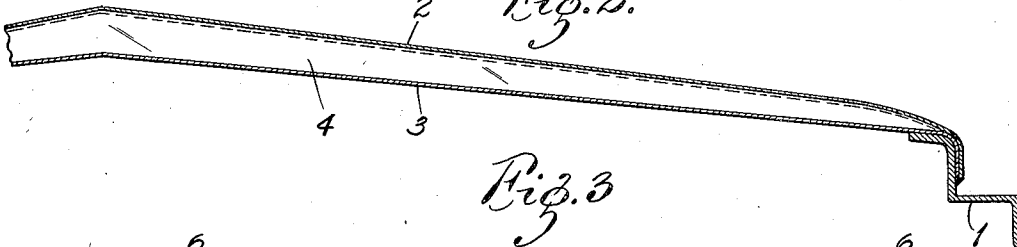


Fig. 3.

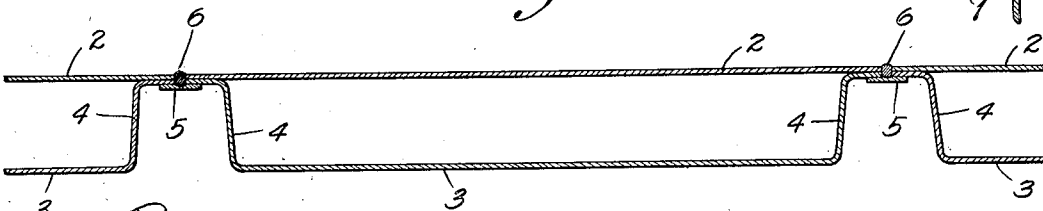


Fig. 4.

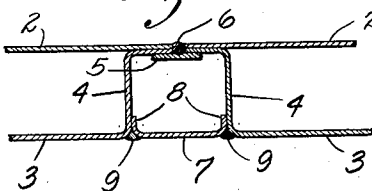


Fig. 5.

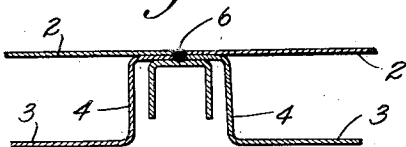
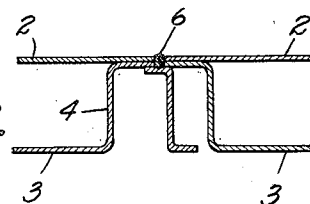


Fig. 6.



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UNITED STATES PATENT OFFICE

2,034,379

CAR ROOF

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Pa., a corporation of Pennsylvania

Application June 22, 1935, Serial No. 27,848

7 Claims. (Cl. 108—5.4)

This invention relates to metal car roofs and includes matter that is divided out of my co-pending applications for patents for Car roof Serial Nos. 659,490 and 659,491 filed March 3, 1933. The invention consists in the construction hereinafter described and claimed.

In the accompanying drawing, which forms part of this specification and wherein like reference numerals refer to like parts wherever they occur,

Fig. 1 is a plan view of a portion of a car roof embodying my invention,

Fig. 2 is a sectional view crosswise of the car on the line 2—2 of Fig. 1,

Fig. 3 is a sectional view lengthwise of the car on the line 3—3 of Fig. 1,

Figs. 4, 5, and 6 are sectional views similar to Fig. 3 illustrating modifications of construction.

The present roof comprises side plates 1, and roof sheets 2, 3 which span from side plate to side plate and have their ends secured to the side plates.

The sheets are arranged in two series, namely, an upper series wherein the sheets are plain sheets 2 that are slightly spaced apart and a lower series wherein the bodies of the sheets 3 are plain but the margins are formed into upstanding angular flanges 4, with small spaces between the edges of adjacent flanges. The spaces between the upper sheets and the spaces between the lower sheets register with each other. Beneath such spaces are metal members 5 that extend crosswise of the car and serve as reinforcements or structural parts of the roof.

In the construction illustrated in Fig. 3, this member is a flat strip that is wide enough to lap the edges of the adjacent sheets. By this arrangement, the space between adjacent sheets is bounded by the edges of four sheets and by the face portion of the reinforcing member. These four edges and the reinforcing member are all welded together by a single weld 6 of added metal which fills such space.

The construction illustrated in Fig. 4 is similar to that illustrated in Fig. 3, but includes an additional series of narrow sheets 7 interposed between the body portions of the lower sheets 3. Each of these narrow sheets extends from the upright portion of the flange of one lower sheet to the upright portion of the flange of the adjacent sheet and is welded to said flanges to form a hollow cell. As illustrated, the narrow sheets are located substantially in the plane of the body portions of the lower main sheets and have upstanding flanges 8 that bear against the

upstanding flanges of said main sheets and the welds 9 are made of added metal substantially in said plane. Among the advantages of this modification is the fact that the entire roof structure is made cellular and its insulating efficiency thereby increased. Another advantage is that the narrow strips cooperate with the flanges and with the metal of the upper level to constitute hollow box girders and also function as struts between the flanges of the lower sheets, whereby the whole roof structure is greatly stiffened and strengthened.

The constructions illustrated in Figs. 5 and 6 are similar to the construction of Fig. 3 but substitute special shapes for the flat reinforcing strip of Fig. 3. In the constructions of Figs. 5 and 6, the top member of the shape is flat and, so far as welding is concerned, functions the same as the flat strip; but the inverted channel-shape of Fig. 5 and the Z-shape of Fig. 6 are especially adapted to increase the reinforcement and afford support for a wooden lining or load lifting device or the like.

What I claim is:

1. A car roof comprising an upper series of plain sheets with their edges spaced apart, a lower series of sheets with upturned angular flanges likewise spaced apart, reinforcing members bridging such spaces and welds in such spaces uniting the reinforcing members to the adjacent edges of both upper and lower sheets.

2. A car roof comprising a series of sheets arranged at an upper level with spaces between adjacent upper sheets, a series of sheets arranged with their bodies at a lower level and with angular side flanges bearing against the upper sheets and with spaces between the flanges of adjacent lower sheets in register with the spaces between the upper sheets, members below and spanning the respective spaces and welds of added metal filling said spaces and uniting together the four sheet edges and the adjacent member.

3. A car roof comprising a series of sheets arranged at an upper level with spaces between adjacent upper sheets, a series of sheets arranged with their bodies at a lower level and with angular side flanges bearing against the upper sheets and with spaces between the flanges of adjacent lower sheets in register with the spaces between the upper sheets, reinforcing members with flat tops below and spanning the respective spaces and welds of added metal filling said spaces and uniting together the four sheet edges and the adjacent member.

4. A car roof comprising a series of sheets ar-

5 ranged at an upper level with spaces between adjacent upper sheets, a series of sheets arranged with their bodies at a lower level and with angular side flanges bearing against the upper sheets and with spaces between the flanges of adjacent lower sheets in register with the spaces between the upper sheets, reinforcing members of Z-shape with its top flange below and spanning the respective spaces and welds of added metal filling said spaces and uniting together the four sheet edges and the adjacent member.

10 5. A car roof comprising a series of sheets arranged at an upper level with spaces between adjacent upper sheets, a series of sheets arranged with their bodies at a lower level and with angular side flanges bearing against the upper sheets and with spaces between the flanges of adjacent lower sheets in register with the spaces between the upper sheets, inverted channel-shaped members below and spanning the respective spaces and welds of added metal filling said spaces and uniting together the four sheet edges and the adjacent member.

20 6. A car roof comprising a series of plain sheets arranged at an upper level with spaces between

adjacent upper sheets, a series of sheets arranged with their bodies at a lower level and with angular side flanges bearing against the upper sheets and with spaces between the flanges of adjacent lower sheets in register with the spaces between the upper sheets, members below the respective spaces, and welds of added metal filling the respective spaces and each uniting together one of said members and the four adjacent sheet edges.

10 7. A car roof comprising a series of plain sheets arranged at an upper level with spaces between adjacent upper sheets, a series of sheets arranged with their bodies at a lower level and with angular side flanges bearing against the upper sheets and with spaces between the flanges of adjacent lower sheets in register with the spaces between the upper sheets, members below the respective spaces, welds of added metal filling the respective spaces and each uniting together one of said members and the four adjacent sheet edges, and sheets welded to the vertical portions of the flanges of adjacent lower sheets at a distance below the upper sheets.

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