March 17, 1936. C. D. BONSALL 2,034,377

CAR ROOF

Original Filed March 3, 1933

Fig. 1.

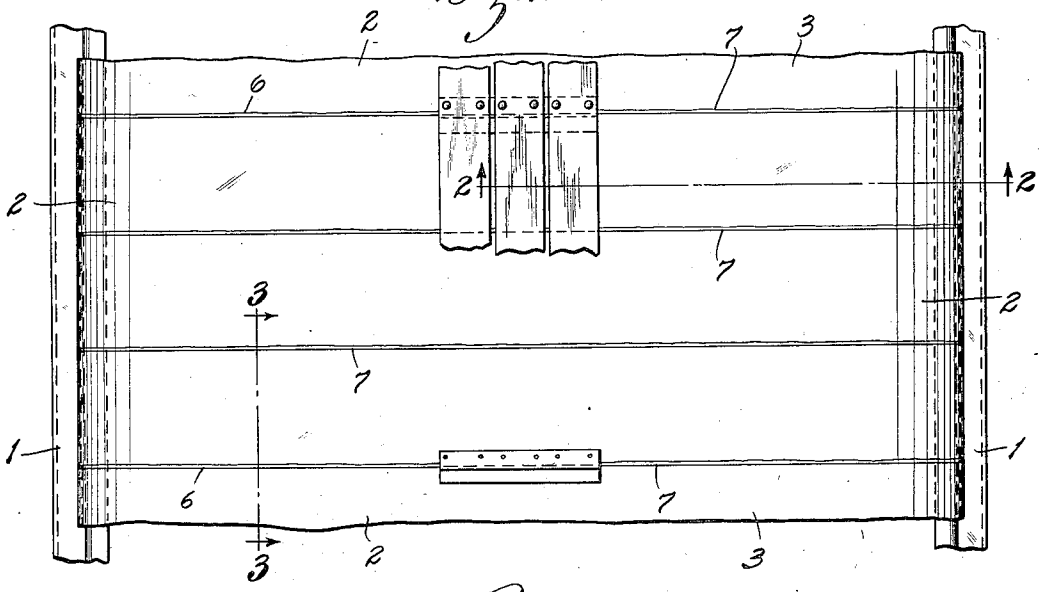


Fig. 2.

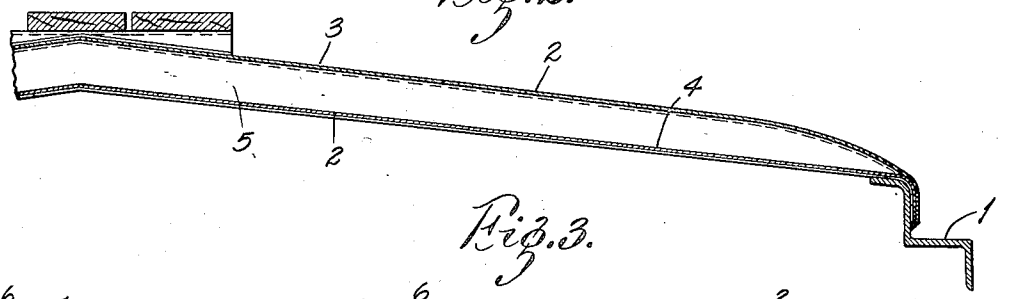


Fig. 3.

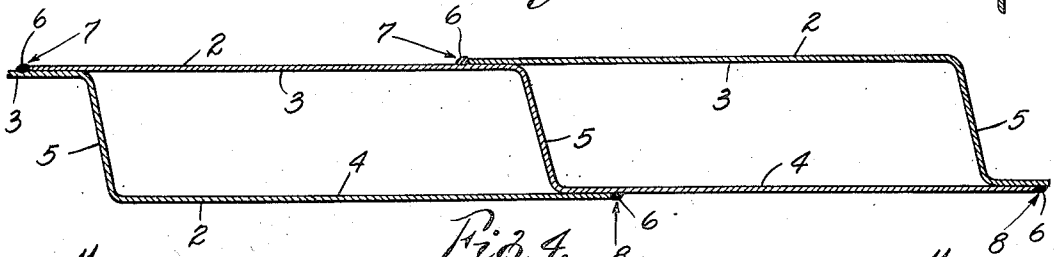
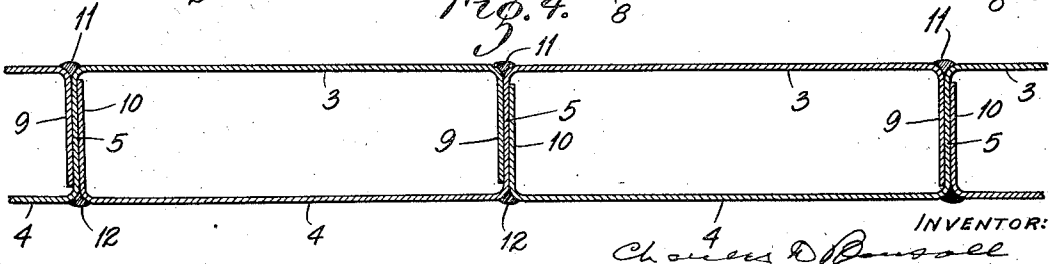


Fig. 4.



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2,034,377

CAR ROOF

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Original application March 3, 1933, Serial No. 659,490. Divided and this application June 20, 1935, Serial No. 27,524

7 Claims. (Cl. 108—5.4)

This application is a division of my co-pending application for patent for improvement in Car roof, Serial No. 659,490 filed March 3, 1933.

It is quite common to load certain commodities, such as flour and cement, into freight cars, while they are still hot from the process of manufacture, with the result that the roofs of the cars sometimes "sweat" enough to cause considerable damage to such commodities. One of the principal objects of the present invention is to minimize such sweating. Other objects are to protect the lading from rapid changes of temperature and to design a construction of roof that will be economical of material and labor, of great strength and will have advantages hereinafter appearing.

The invention consists in the parts and in the arrangements and combinations of parts 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 cellular car roof embodying my invention,

Fig. 2 is an enlarged vertical transverse section through one-half of the roof on the line 2—2 of Fig. 1,

Fig. 3 is a section on the line 3—3 of Fig. 1; and

Fig. 4 is a similar section illustrating a modification of the invention.

The construction illustrated in Fig. 1 comprises side plates 1, roof sheets 2 that extend from side plate to side plate and have their ends bent down and secured to the side plates. Each roof sheet is offset to form an upper panel 3, a lower panel 4 and a substantially vertical web portion 5 that extends crosswise of the car near the middle of the sheet. The Z-shaped sheets thus formed are arranged with their vertical webs spaced such distances apart that the top outer margin of one sheet will extend somewhat beyond the web of the next adjacent sheet and rest on the upper panel thereof and with the outer margin of the lower panel of the last mentioned sheet extending under and somewhat beyond the web of the first mentioned sheet, all of the sheets being arranged in like manner. Adjacent sheets are secured together by welds 6 located opposite the exposed edge of one sheet and flatwise with respect to the adjacent sheet. In this manner each sheet is connected to the adjacent sheets by two continuous welds 7, 8, one of said welds 7 joining the upper panel of one sheet to the upper panel of the sheet next adjacent thereto and the other weld 8 joining its lower panel to the lower panel of the sheet next adjacent thereto.

In the construction above described, no other work is required on the sheets than that of offsetting; and consequently there is no need of shearing the side margins to conform to any specified dimension.

In the construction illustrated in Fig. 4, each sheet is offset along its longitudinal middle line to form an upper panel 3, a lower panel 4 and a substantially vertical web portion 5. The upper half or panel has a downturned flange 9 along its outer margin and the lower half or panel 4 has an upstanding flange 10 along its outer margin. Such sheets are nested together in such manner that the vertical web member 5 of one sheet is located between the downturned flange of one sheet and the upturned flange of another sheet. At the top and bottom of each such web member, the outermost sheets are welded as at 11, to such web member. Preferably the innermost sheets also are welded, as at 12, at their edges to such web members. The vertical web member 5 is thus thoroughly reinforced by the adjacent sheet flanges 9 and 10 and the location of the welds 11 and 12 at the top and bottom of the roof makes them exceptionally suitable for their work.

What I claim is:

1. A car roof construction comprising car side plates and a self-supporting cellular car roof supported on said side plates, said roof comprising roof sheets each of which extends from side plate to side plate and has flat ends that are bent downwardly beyond said side plates, the portion of each sheet between said flat ends being formed into an upper panel, a lower panel and a web integrally connecting said panels with the end portions of the web decreasing in depth to the vanishing point at the eaves, welds connecting said adjacent upper panels together and welds connecting adjacent lower panels together.

2. A car roof construction comprising car side plates and a self-supporting cellular car roof supported on said side plates, said roof comprising upper panels, lower panels and vertically disposed web members integrally connecting upper and lower panels all merging at the eaves into plain end portions that are bent down over the side plates, welds connecting adjacent upper panels together adjacent to said web members and welds connecting adjacent lower panels together adjacent to said web members.

3. A car roof construction comprising car side plates and a self-supporting cellular car roof supported on said side plates, said roof compris-

ing roof sheets each of which extends from side plate to side plate and has flat ends that are bent downwardly beyond said side plates, the portion of each sheet between said flat ends being offset near the middle thereof to form a web and an upper panel and a lower panel with the end portions of the web decreasing in depth to the vanishing point at the eaves, the free margins of the upper panels overlapping the web margins of adjacent panels and the free margins of the lower panels underlapping the web margins of adjacent panels and welds securing the lapped portions together.

4. A car roof construction comprising car side plates and a self-supporting cellular car roof supported on said side plates, said roof comprising roof sheets each of which extends from side plate to side plate and has flat ends that are bent downwardly beyond said side plates, the portion of each sheet between said flat ends being offset near the middle thereof to form a web and an upper panel and a lower panel with the end portions of the web decreasing in depth to the vanishing point at the eaves, the free margins of the upper panels overlapping the web margins of adjacent panels and the free margins of the lower panels underlapping the web margins of adjacent panels and welds along the free edges of the respective panels for securing them to the adjacent panels.

5. A cellular car roof construction comprising side plates and a self-supporting cellular car roof secured to said side plates, said roof comprising sheets that extend from side plate to side plate and have flat end portions that are bent downwardly beyond the side plates, the portions of each sheet between the side plates being offset near the middle to form upper and lower panels and a web connecting them with the end portions of the web decreasing in depth to the vanishing point at the eaves, said sheets being so arranged that the web of one sheet lies between the side edges of adjacent sheets and welds at the top and bottom of the webs for uniting such web to the adjacent panels.

6. A cellular car roof construction comprising side plates and a self-supporting cellular car roof secured to said side plates, said roof comprising sheets that extend from side plate to side plate and have flat end portions that are bent downwardly beyond the side plates, the portions of each sheet between the side plates being offset near the middle to form upper and lower panels and a web connecting them with the end portions of the web decreasing in depth to the vanishing point at the eaves, said sheets being so arranged that the web of one sheet lies between the side edges of adjacent sheets, and welds at the top and bottom of the webs uniting such web to both the top and bottom of adjacent flanges.

7. A cellular car roof construction comprising side plates and a self-supporting cellular car roof secured to said side plates, said roof comprising sheets that extend from side plate to side plate and have flat end portions that are bent downwardly beyond the side plates, the portions of each sheet between the side plates being offset near the middle to form upper and lower panels and a web connecting them with the end portions of the web decreasing in depth to the vanishing point at the eaves, said sheets being so arranged that the web of one sheet lies between side flanges of adjacent sheets and welds at the top and bottom of the webs uniting such web to the adjacent panels.

CHARLES DAVID BONSALL.