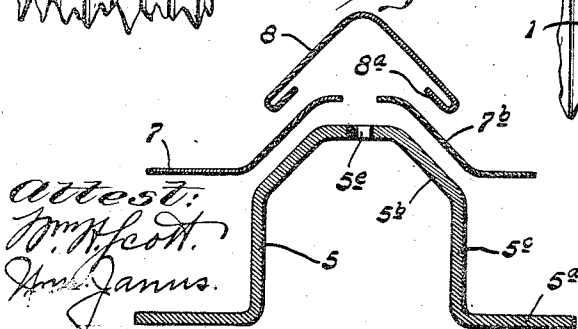
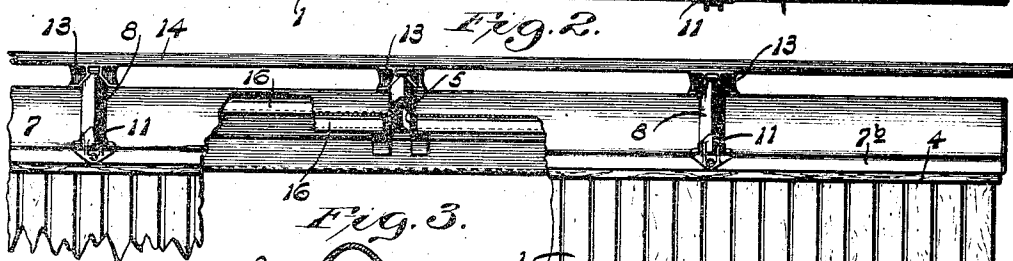
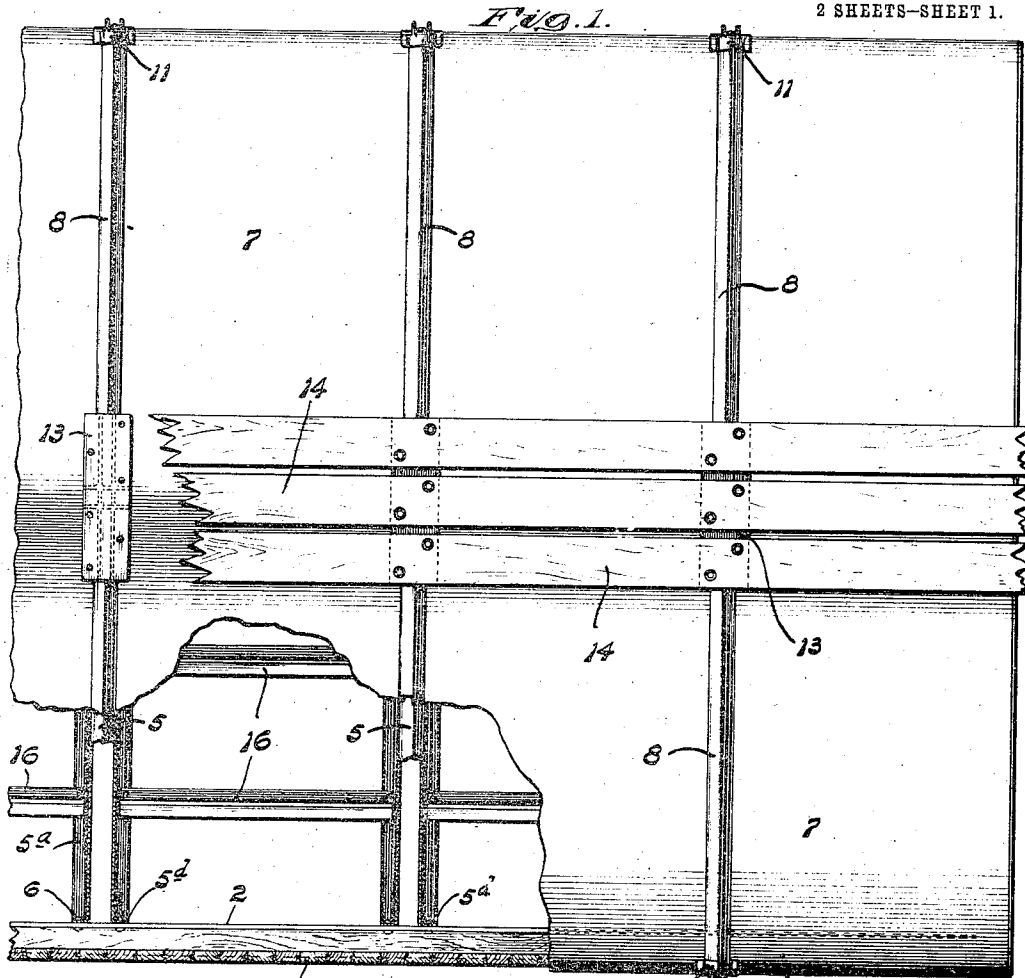


J. H. WEISBROD.
CAR ROOF.
APPLICATION FILED FEB. 9, 1911.

1,023,230.

Patented Apr. 16, 1912.

2 SHEETS—SHEET 1.



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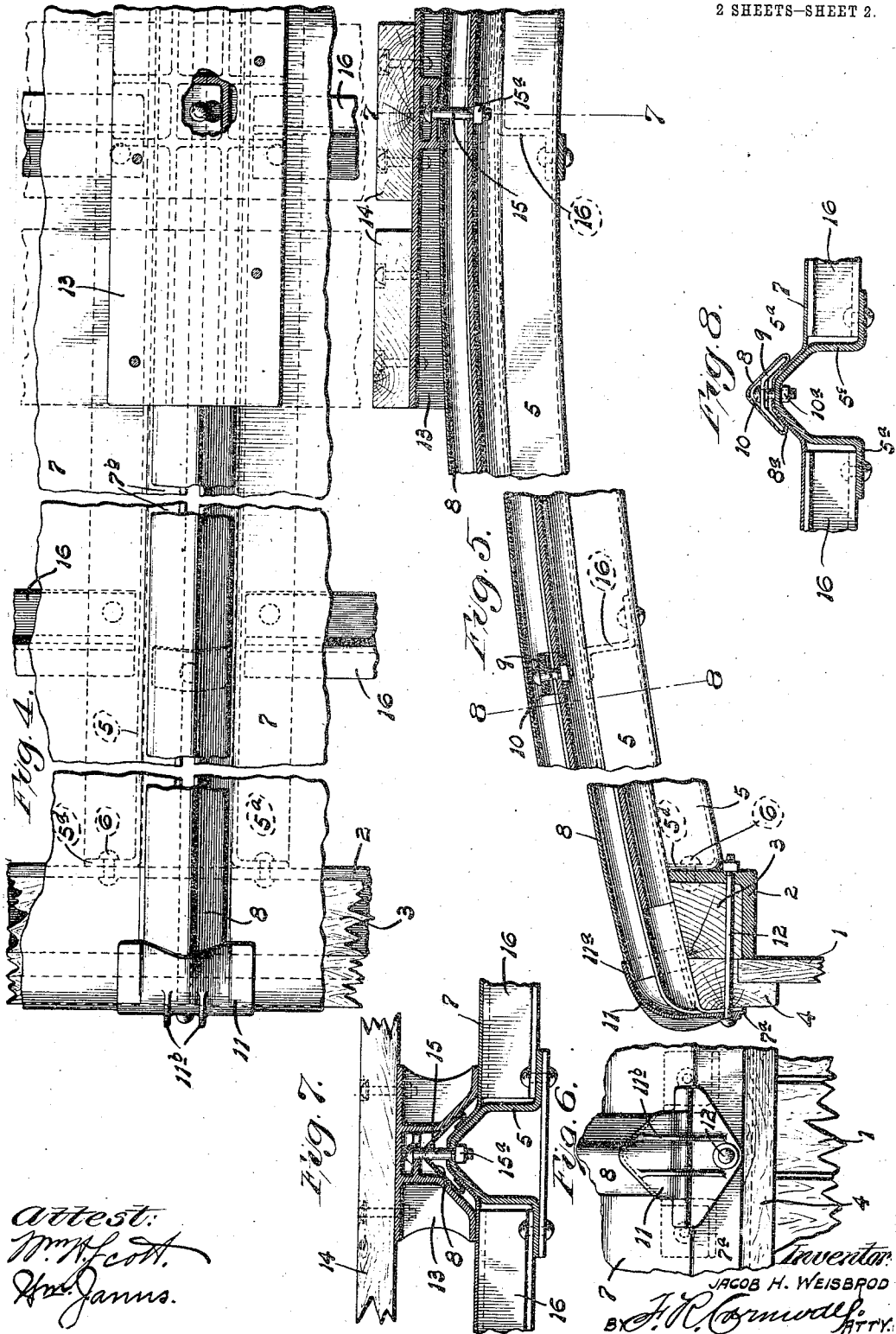
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UNITED STATES PATENT OFFICE.

JACOB H. WEISBROD, OF ST. LOUIS, MISSOURI.

CAR-ROOF.

1,023,230.

Specification of Letters Patent.

Patented Apr. 16, 1912.

Application filed February 9, 1911. Serial No. 807,682.

To all whom it may concern:

Be it known that I, JACOB H. WEISBROD, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Car-Roofs, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view, partly in horizontal section; Fig. 2 is a side elevational view, partly in vertical section; Fig. 3 is an enlarged detail view, showing one of the carlines, the edges of the roof sheets and the crown or capping strip; Fig. 4 is an enlarged top plan view, showing certain parts broken away; Fig. 5 is a vertical cross-sectional view; Fig. 6 is an enlarged side elevational view, showing the carline end cap; Fig. 7 is a vertical sectional view on line 7—7 of Fig. 5; and Fig. 8 is a vertical sectional view on line 8—8 of Fig. 5.

This invention relates to a new and useful improvement in car roofs, preferably of that type wherein the roof sheets are made of metal, there being no wooden roof sheathing used in the construction.

My improved roof is designed especially for use in connection with metal cars or cars having metallic framing, the object being to construct a roof of the character described whose roof sheets are not perforated at any point with securing devices.

Another object is to secure the roof sheets in position by resilient means, whereby a certain amount of flexibility is permitted to enable the roof sheets to accommodate the torsional strains imposed on the car without disturbing the joints which are practically watertight at all times.

With these objects in view, the invention consists in the construction, arrangement and combination of the several parts, all as will hereinafter be described and pointed out in the claims.

In the drawings, 1 indicates the side wall of the car which is here shown as being made of wood, but it is obvious that this side wall could be made of metal sheets, if desired.

2 is the side plate in the form of an angle, and 3 and 4 are wooden furring strips used to fill out the side plate and secure the side

wall of the car in position respectively, the latter furring strips serving practically as a facia plate.

5 are the carlines, substantially of an inverted U-shape, having laterally extending flanges 5^a and inclined top walls 5^b. At each end these carlines have their vertical walls 5^c bent laterally, as shown in Figs. 1, 4 and 5, at 5^d, for the passage of fastening devices, preferably in the form of rivets which secure the carlines in position to the side plate 2. The inclined wall of the carlines preferably extends slightly over the side plate, as shown in Figs. 4 and 5, to afford an extended bearing for the roof sheets.

7 are the roof sheets, which preferably extend entirely across the car and have their side edges bent down over the facia plate 4, as indicated at 7^a. The edges of these roof sheets are bent upwardly as designated by 7^b, so as to occupy inclined planes and rest upon the inclined top walls 5^b of the carlines, which carlines also preferably extend entirely across the car. The extreme edges of each sheet preferably extend horizontally and rest upon the flat top portion of the carlines, but are spaced apart sufficiently so as to permit passage of fastening devices which extend through openings 5^e on the flat top portions of the carlines.

8 is the crown ridge or capping strip, which is substantially of an inverted U-shape, and whose legs 8^a are folded inwardly, but preferably spaced apart from the exposed sides of the capping strip, said U-bent portions bearing on the inclined faces of the adjacent edges of the roof sheets 7.

9 are saddle castings whose legs preferably fit in the grooves formed by the U-bent portions 8^a of the capping strip, said saddle castings being provided with openings for the reception of bolts 10, whose shanks, where they pass through the saddle castings, are preferably squared to prevent turning. These bolts pass through the carlines and have nuts 10^a on their lower ends accessible from the interior of the car, whereby the saddle castings may be tightened and the roof sheets held in position. As no fastening devices pass through the roof sheets at this point, it is obvious that they have certain play or shifting movement, which enables them to take up the torsional strains of the car without balking.

11 indicates an end cap provided with a grooved portion 11^a, which extends over the capping strip 8. This end cap snugly fits the capping strip and also embraces the roof sheets on each side of the capping strip, as shown in Fig. 6, said end cap being preferably strengthened by reinforcing ribs 11^b and being held in position by bolt 12 passing horizontally through the furring strips 3 and 4 and the vertical leg of the side plate 2.

13 represents casting constituting a chair or support for the running boards 14, which are preferably secured thereto by bolts as shown. Chair 13 straddles the capping strip 8 and is held in position by means of a bolt 15, whose head is received in a key-hole opening formed in the bottom wall of a closed chamber or pocket in the chair, and whose threaded end passes through an opening in the carline, where it receives a nut 15^a by which it may be tightened.

In my improved construction there are no continuous purlins, but I prefer to use Z-shaped members 16 at the center and sides of the car, which members are secured to the outwardly extending flanges of the carlines and serve as supports for the roof sheets 7. I prefer not to secure these supports to the roof sheets in any manner, as I thus avoid perforating the roof sheets and also avoid restraining the roof sheets against movement.

It will be noticed that the carlines extending from side to side of the car support the entire weight of the roof and that there is no ridged purlin used. By avoiding the use of purlins under the carline, I am enabled to increase the head room in the car, which is a desirable feature.

What I claim is:

1. In a car roof the combination with inverted channel shaped carlines each provided on its upper portion with an oppositely disposed pair of inclined faces which carlines are continuous from one side of the car to the other of roof sheets arranged between said carlines, the transverse edges of which roof sheets are bent upwardly to correspond with and rest upon the inclined faces on the carlines, inverted V-shaped capping strips, that are continuous from one side of the car to the other, which strips are provided with re-folded edges which bear against the inclined edges of the roof sheets positioned on the carlines, saddle pieces positioned beneath the capping strip with their ends fitting in the grooves formed by the re-folded edges of said strip means for fastening the saddle pieces to the carlines and end caps inclosing the ends of the capping strips and which end caps are fixed to the top plate of the car body.

2. In a car roof the combination with inverted channel shaped carlines each pro-

vided on its upper portion with an oppositely disposed pair of inclined faces of roof sheets having their transverse edges bent upwardly at angles to correspond with the inclined faces on the carlines, an inverted V-shaped capping strip applied to each carline over the up-turned edges of the roof sheets, the edges of which capping strip are bent inwardly and upwardly to form resilient legs spaced apart from the body of said capping strip means positioned beneath the capping strip and extending downward through the top of the carline for yieldingly maintaining the resilient legs of the roof sheets on the carline and end caps inclosing the ends of the capping strips and which end caps are fixed to the side plates of the car body.

3. In a car roof the combination with carlines and roof sheets having their edges resting on said carlines, of capping strips each comprising an inverted V-shaped member extending continuously from one side of the car to the other, the edges of which inverted V-shaped member are folded inwardly and upwardly to form resilient legs spaced apart from the body portion of the capping strip and which resilient legs engage the corresponding edges of the roof sheets, saddle pieces positioned beneath the capping strip and fitting in the grooves formed by the inwardly bent edges means passing through the capping strip and the top of the carline for fastening said saddle piece and maintaining the edges of the roof sheets on the carline and end caps inclosing the ends of the capping strips which end caps are fixed to the side plates of the car.

4. The herein described car roof comprising inverted channel shaped carlines extending from one side of the car to the other, the upper corners of which carlines are provided with oppositely disposed inclined faces laterally projecting flanges on the lower edges of said carlines for supporting the ends of the roof purlins, roof sheets arranged between the carlines, the edges of which roof sheets are bent upwardly to form inclined portions which bear directly upon the tops of the inclined faces on the inverted channel shaped carlines, capping strips extending from one side of the car to the other upon the carlines, which capping strips are of inverted V-shape in cross section, the legs of which are re-folded and bear directly upon the inclined edges of the roof sheets, means cooperating with the re-folded edges of the capping strips for holding the same in position and end caps inclosing the ends of the capping strips and which end caps are fixed to the side plates of the car body.

5. In a car roof, the combination with inverted channel shaped carlines each provided on its upper corners with oppositely disposed inclined faces which carlines ex-

tend from one side of the car body to the other, of roof sheets arranged between said carlines, the transverse edges of which roof sheets are bent upwardly to form inclined portions which rest directly upon the inclined faces at the upper corners of the carlines, and inverted V-shaped capping strips having under-turned, refolded edges which are spaced apart from the body portion of said strips to form resilient legs which

yieldingly bear upon the inclined edges of the roof sheets.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 6th day of February, 1911.

JACOB H. WEISBROD.

Witnesses:

M. P. SMITH,
ALMA GEBHART.