W. P. MURPHY.

CAR ROOF.

APPLICATION FILED JAN. 29, 1919.

1,343,786.

Patented June 15, 1920.

2 SHEETS—SHEET 1.

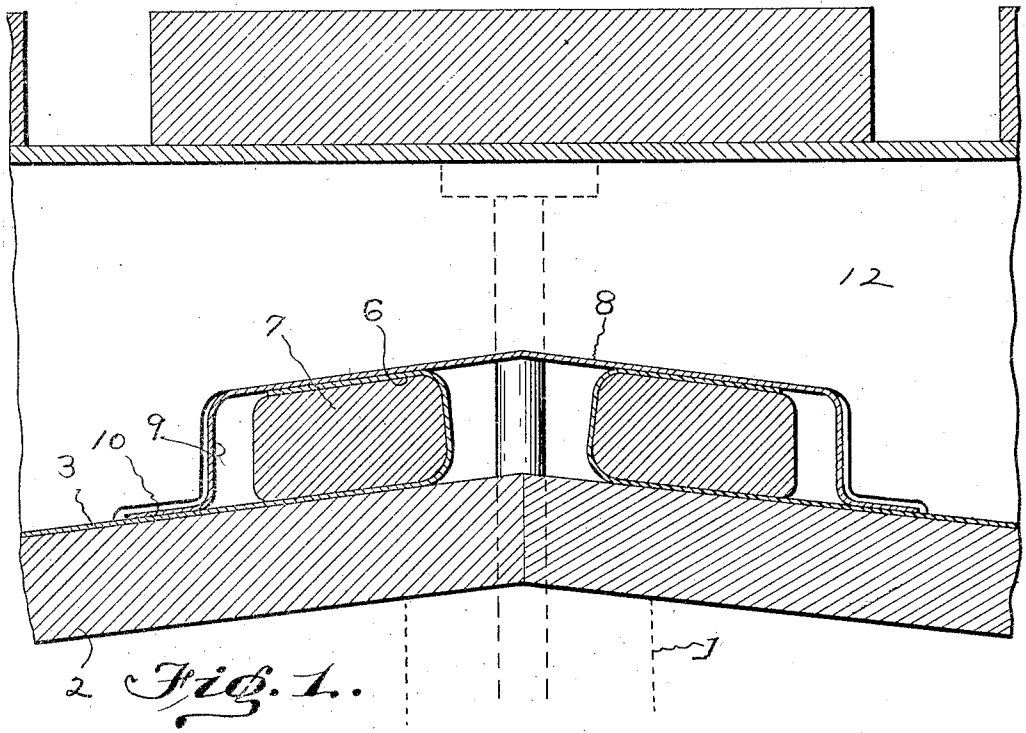


Fig. 1.

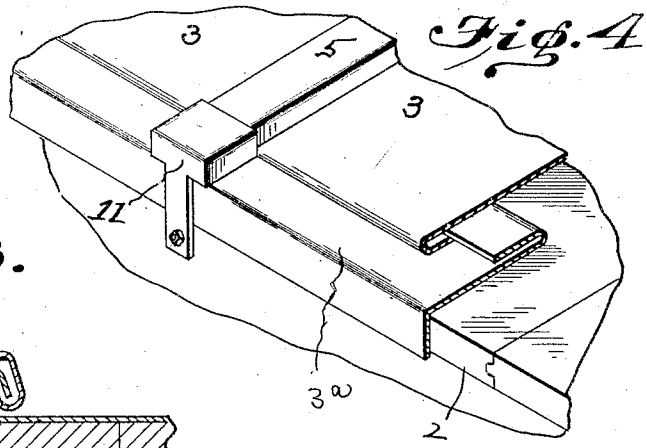
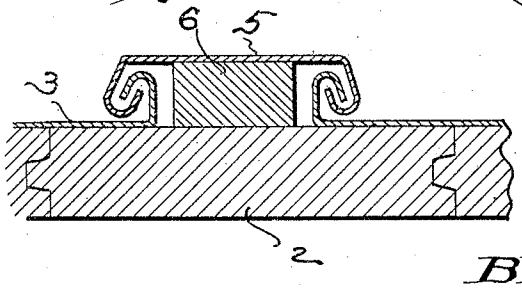


Fig. 4.

Fig. 3.



Inventor,
Walter P. Murphy
BY Lewis S. Clarkson
his Attorney.

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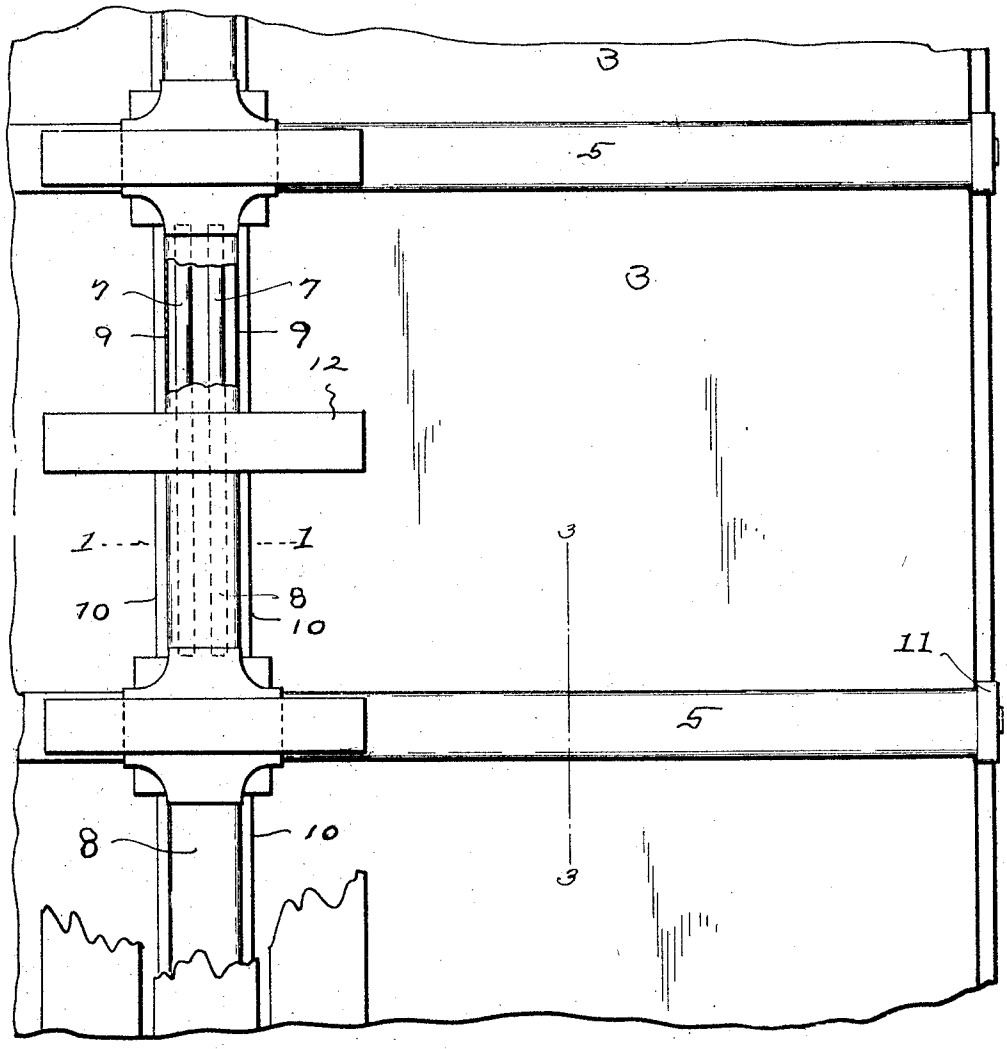
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2 SHEETS—SHEET 2.

Fig. 2.



Inventor,

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UNITED STATES PATENT OFFICE.

WALTER P. MURPHY, OF CHICAGO, ILLINOIS.

CAR-ROOF.

1,343,786. Specification of Letters Patent. Patented June 15, 1920.

Application filed January 29, 1919. Serial No. 273,824.

To all whom it may concern:

Be it known that I, WALTER P. MURPHY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Roofs, of which the following is a specification.

The object of my invention is to mount the roof sheets on the substructure in such manner that they are free to move within certain limitations.

The invention consists in means whereby the roof sheets are mounted for pivotal movement at their eaves and corners.

The invention consists further in providing a stop at the eaves for the eaves corners of the roof sheets on which the sheets pivot.

Further objects and particulars of the invention will appear in connection with the following description and the accompanying drawings.

In the drawings:

Figure 1 is an enlarged detail transverse sectional view of a car roof on the line 1—1 Fig. 2, the running board saddle being in elevation.

Fig. 2 is a detail top plane view of a car roof embodying my invention.

Fig. 3 is an enlarged detail sectional view on the line 3—3 Fig. 2.

Fig. 4 is an enlarged detail sectional view showing the flexible joint between the roof or plate and the flashing at the eaves of the car.

The reference numeral 1 designates a suitable ridge pole and 2 designates suitable roof sheathing on which the roof plates 3 are bodily movably mounted. It will be seen from the drawings that the joints between the side marginal edges of the sheets, at the eaves, and at the ridge are loose flexible joints whereby the sheets or plates are free to move bodily to compensate for service movements without buckling or otherwise distorting the sheets or plates.

The side marginal edges of the roof sheets 3 are provided with upstanding re-bent flanges which interlock, with a loose flexible joint with the re-bent side marginal flanges of the seam cap 5. A mullion 6 is positioned under the seam cap 5 and between the side marginal edges of the roof sheets or plates so that said plates are free to move relatively to said mullion.

The loose flexible joint between the roof sheets 2 and the flashing 3^a is clearly shown in Fig. 4.

The ridge end of the roof sheets or plates is re-bent, the portion 6 of said bend overlying the upper face of the roof plate. A filler strip 7 is suitably secured within said re-bend with its edge projecting beyond the edge of the re-bend whereby the possibility of the edge of the re-bend cutting or chafing the ridge cap is eliminated.

The ridge cap 8 is provided with downwardly projecting side flanges 9 which terminate in a lateral flange 10, said flange 10 overlying the roof plates. It will be seen from Fig. 1 that the ridge ends of the sheets or plates on opposite sides of the ridge are spaced from each other whereby the sheets or plates are free to move toward each other at the ridge and are free to move relatively to each other.

In order to relieve the side flanges 9 of the ridge cap of stresses in the the direction of the eaves, I support the roof plates at their outer corners at the eaves. I secure roof clips or stops 11 to the side wall structure of the car, which clips extend upwardly and over the metal roof structure and prevent the roof plates from moving bodily toward the eaves and maintain the filler blocks 7 in spaced relation to the flanges 9 of the ridge cap.

The fillers 7 constitute or function as a rigidifying member extending from side to side of the roof plates and maintain the ridge end of the roof plates flat and prevent buckling or distorting of the ridge end of the roof plate, whereby slip joint between the ridge cap and plate is maintained free. All joints in the metal roof structure are weather proof.

The roof shown herein is designed to accommodate itself to service movements of the car.

The loose joints between the seam caps 5 and roof sheets or plates 3 permit the sheets to move bodily on the roof sheathing without being distorted or injuring the joint between them and the seam caps. In some instances the movement of the car is such that the roof sheets are caused to move tangent to the mullions in which movement one or the other of the eaves corners of the roof sheet is loosely pivoted on the closed end of the seam cap said closed end functioning as a fulcrum for the sheet. The outer end of

the seam cap resting against any suitable eaves clip. The eaves end of the seam cap may be closed in any desired way, such for instance as shown in the patent to Hoffman, 1,092,485, April 7, 1914, or Queenan and Murphy, No. 919,461, April 27, 1909.

The running board saddle 12 is provided with a recess in its underface adapted to receive the ridge cap.

Matter shown but not claimed in this case is claimed in my application filed January 29, 1919, Serial No. 273,823.

What I claim is:—

1. In a car, a roof including a sheathing, metal plates bodily movably mounted on said sheathing and spaced apart at the ridge and along their side marginal edges, a mullion between adjacent sheets, a seam cap over said mullions and side edges of the plates, the side edges of the plates having play between the mullions and caps, said caps being provided with an end wall at their eaves end, which constitutes a stop to limit their outward movement of the plates, clips secured to the side wall structure of the car and projecting upwardly and inwardly over said seam caps, the end wall of the seam caps constituting pivot points for the plates, an open return bend at the ridge end of the plates overlying and spaced from the upper face of the plates, a filler secured in said bend and extending therein approximately the width of the plate, a ridge cap overlying the ridge end of the plate and said filler, side flanges on said ridge cap extending downward to the plate; said bend and filler being loosely confined within the ridge cap and spaced from the said side flange by means of said stop.

2. In a car, a roof including a sheathing, metal plates bodily movably mounted thereon and unattached thereto, a rigidifying element at the ridge end of the plates extending transversely thereof, a ridge cap inclosing said rigidifying element and spaced therefrom, stops at the eaves end of the plates functioning to space said rigidifying element from the ridge cap and as pivots for the eaves end of the plates on which the plates pivot to accommodate service movements of the car whereby the plates will not buckle or tear said rigidifying element having a floating movement in the ridge cap.

3. In a car, a roof including a sheathing, metal plates bodily movably mounted on said sheathing and spaced apart at their ridge and side marginal edges, a seam cap over the side marginal edges of the sheets permitting free bodily movement of the sheets, a stop at the eaves end of the seam cap upon which the eaves corners of the roof sheets may pivot, a ridge cap extending over the ridge end portions of the roof sheets and a filler in the ridge end of the roof sheets which is free to slide within the cap as the sheets move to accommodate car service movements without imposing strain upon the parts.

4. In a car, a roof including a sheathing, metal roof plates bodily movably mounted on said sheathing and spaced apart at the ridge and along their side marginal edges, a seam cap over the side marginal edges of the sheets permitting free bodily movements of the sheets, a stop at the eaves end of the seam cap upon which the eaves corners of the sheets may pivot, a hollow ridge cap having side walls, a filler in the ridge end of the sheets positioned within and normally spaced from the side walls of the ridge cap, whereby said sheet may freely move within said cap without imposing strain upon the roof sheets.

In testimony whereof I affix my signature in the presence of a witness.

WALTER P. MURPHY.

Witness:
BENNETT S. JONES.