W. A. BREWER.

METAL ROOF FOR RAILWAY CARS.

APPLICATION FILED DEC. 15, 1913.

1,145,546. Patented July 6, 1915.

Fig. 1.

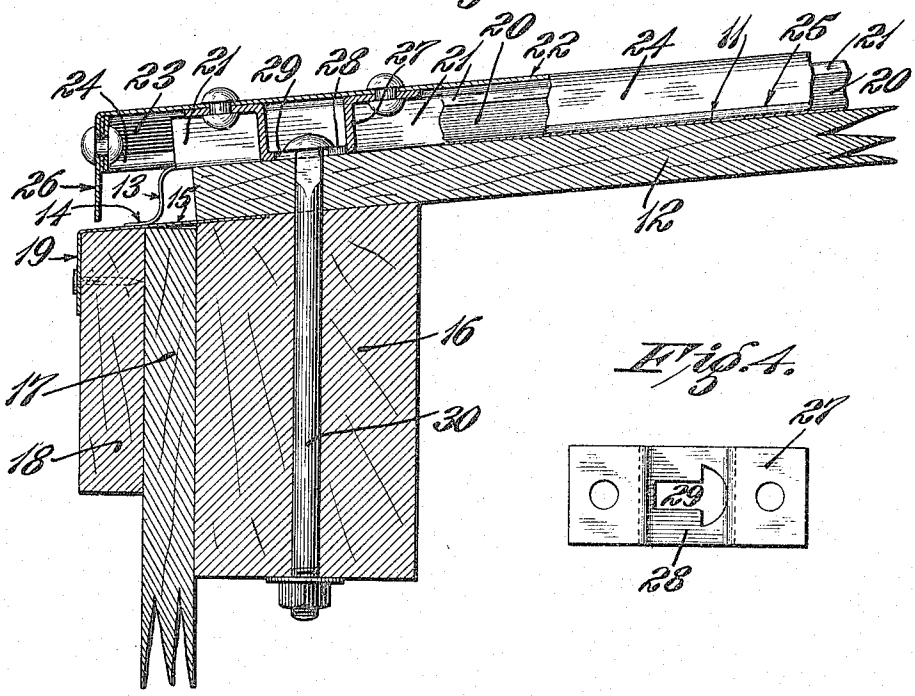


Fig. 4.

Fig. 2.

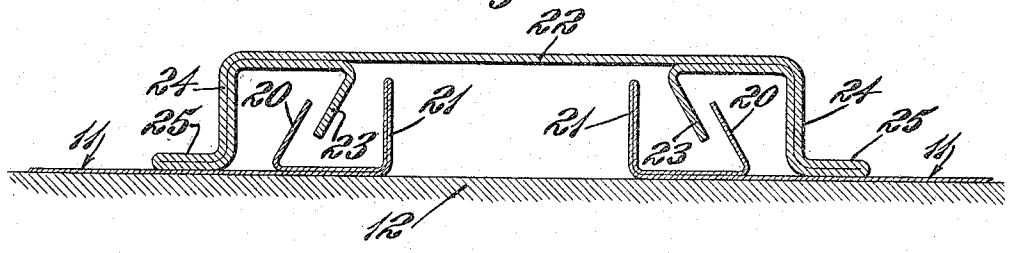
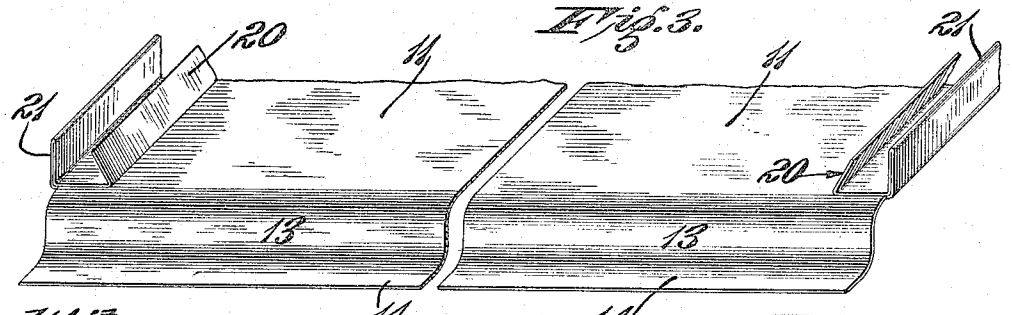


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM A. BREWER, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO P. H. MURPHY COMPANY, OF PARNASSUS, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

METAL ROOF FOR RAILWAY-CARS.

1,145,546. Specification of Letters Patent. Patented July 6, 1915.

Application filed December 15, 1913. Serial No. 806,672.

To all whom it may concern:

Be it known that I, WILLIAM A. BREWER, a citizen of the United States, and a resident of the city of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Metal Roofs for Railway-Cars, of which the following is a specification.

The invention relates particularly to roof structures composed of metal sheets loosely secured in place on the sheathing or substructure of a freight car roof.

The object of the invention is a flexible watertight joint for loosely connecting the sheets of such roofs.

A further object of the invention is an eaves flashing arrangement for coöperating with the eaves ends of the roof sheets to prevent water from getting into the car at the eaves.

A further object of the invention is a fastening means for loosely securing the roof upon the roof substructure without there being any holes through the roof.

Other objects of the invention appear in connection with the following description of the embodiment of the invention illustrated in the accompanying drawings. The invention is more particularly defined in the appended claims.

No claim is made herein for the arrangement of eaves flashing strips and roof boards shown and described, this feature being claimed in my pending application, Serial No. 755,609.

In the drawings, in which like characters designate like parts in the several views,—Figure 1 is a transverse vertical cross-section through the eaves of a car having a roof covering made in accordance with this invention; Fig. 2 is an enlarged cross-section of a joint between two roof sheets; Fig. 3 is a perspective view of the eaves corners of a roof sheet; and Fig. 4 is a plan view of a supporting and fastening iron for a seam cover.

The principal members of the roof are wide metal roof sheets 11 extending crosswise of the car from eaves to eaves and supported on the roof sheathing 12. The eaves ends 13 of the roof sheets are bent down and out to overhang the ends of the roof sheathing boards, the springy eaves margins 14 of the roof sheets thereby produced resting flatwise on eaves flashing strips 15. The eaves flashing strips have their inner margins positioned beneath the eaves ends of the roof sheathing boards and between them and the top of the side plates 16. These eaves flashing strips project outward over the upper ends of the side sheathing boards 17 and fascia boards 18, and their outer margins 19 are turned down and nailed to the fascia boards.

The side margins of the roof sheets are doubled back over the adjacent portions of the sheets, and their extremities 20 are bent up and out at an angle of about 60 degrees from the plane of the sheets. The outer edges of the doubled margins of the roof sheets are bent up at right angles to the plane of the sheets to form marginal flanges 21. The doubled portions of the roof sheets thus form marginal troughs. The roof sheets are spaced apart lengthwise of the car and seam covers 22 are laid over the spaces between them, the seam covers lapping the marginal flanges of the roof sheets. The seam covers have their margins doubled back beneath the adjacent portions, and the inner extremities 23 of the doubled margins are bent down and out at an angle of about 60 degrees to the plane of the roof. The outer edges of the doubled margins of the seam covers are bent down at right angles to form side walls 24, and the lower extremities 25 thereof are bent out at right angles to form bearing surfaces. The seam covers span the marginal troughs, their margins resting flatwise on the roof sheets adjacent to the marginal troughs. The inner extremities 23 of the doubled margins of the seam covers project down into the marginal troughs of the roof sheets parallel with the bent up extremities 20 of the doubled side margins of the roof sheets forming the inner walls of the troughs. The ends 26 of the seam covers are bent down and the side walls are bent in and riveted thereto to form closures for the eaves ends of the joints between the roof sheets.

The seam covers are secured to the roof substructure by means of sheet iron fasteners 27 riveted to their under sides at suitable points, such as above the side plates, purlins or ridge pole. These fasteners 27 have flat supporting portions 28 spaced below the seam covers sufficiently to raise the

latter off the roof substructure. The fasteners are perforated with key hole slots 29 through which the heads of securing bolts 30 are passed. The seam covers clamp the roof sheets down on the substructure, and prevent them from raising off the roof, at the same time permitting them limited lateral movement on the roof substructure. The side marginal troughs and eaves flanges prevent the roof sheets from creeping too far on the roof.

This invention is not restricted to the specific embodiment shown and described, but

What is claimed as the invention is:

1. In an outside metal car roof, roof sheets having troughs along their side margins, seam covers lapping adjacent roof sheets and having doubled margins, the extremities of said margins projecting into said troughs.

2. In an outside metal car roof, roof sheets having troughs along their side margins, seam covers lapping adjacent roof sheets and having doubled margins, the extremities of said margins projecting into said troughs, and the outside edges of said doubled margins bearing upon the margins of said roof sheets near said troughs.

3. A roof sheet for a car roof, said roof sheet being channel-shaped and having troughs along its marginal flanges secured thereto, said troughs being wider at the bottom than at the top and having open ends emptying on the roof sheet short of the eaves ends of the latter.

4. A roof sheet for a car roof, the side margins of said roof sheet being provided with spaced flanges forming troughs discharging on the body portion of the roof sheet near its eaves ends, the eaves ends of said roof sheet having downturned portions crossing the open discharge ends of said troughs and being adapted to shed water from said troughs and the body portion of said roof sheet.

5. A roof sheet for a car roof, the side margins of said roof sheet being provided with spaced flanges forming troughs discharging on the body portion of the roof sheet near its eaves ends, the eaves ends of said roof sheet having downturned portions terminating in portions extending parallel to the body portion of the roof sheet, said downturned and parallel portions crossing the open discharge ends of said troughs and being adapted to shed water from said troughs and the body portion of said roof sheet.

Signed at Pittsburgh, Pa., this 9th day of December, 1913.

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Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."