C. BROWN.

CAR ROOF.

APPLICATION FILED OCT. 21, 1915.

1,166,510.

Patented Jan. 4, 1916.

2 SHEETS—SHEET 1.

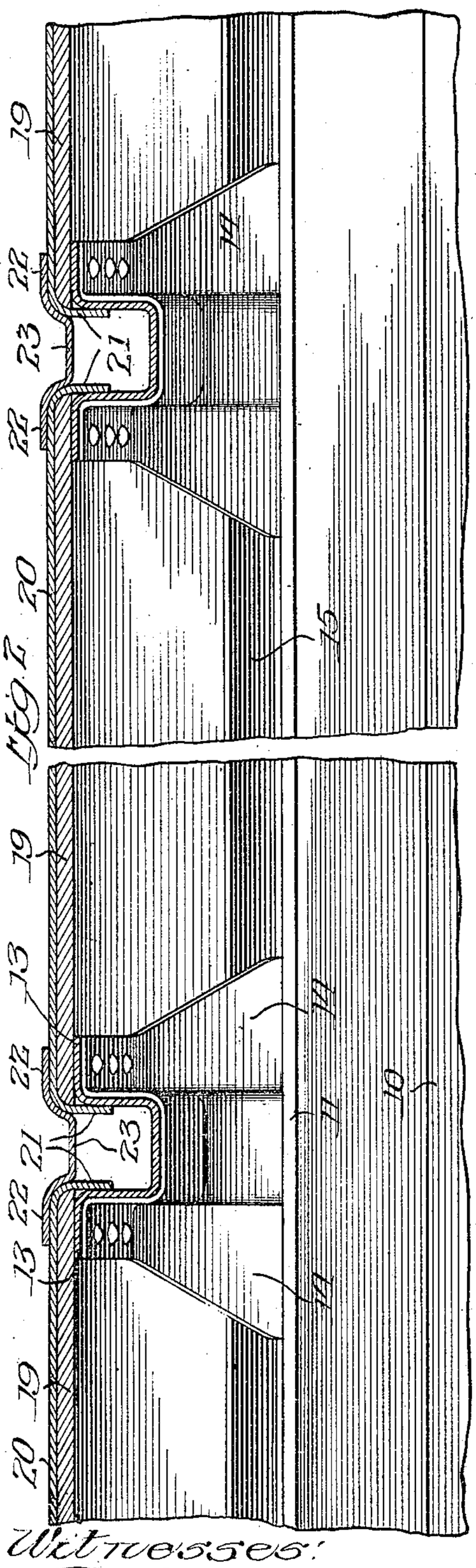

Fig. 2.

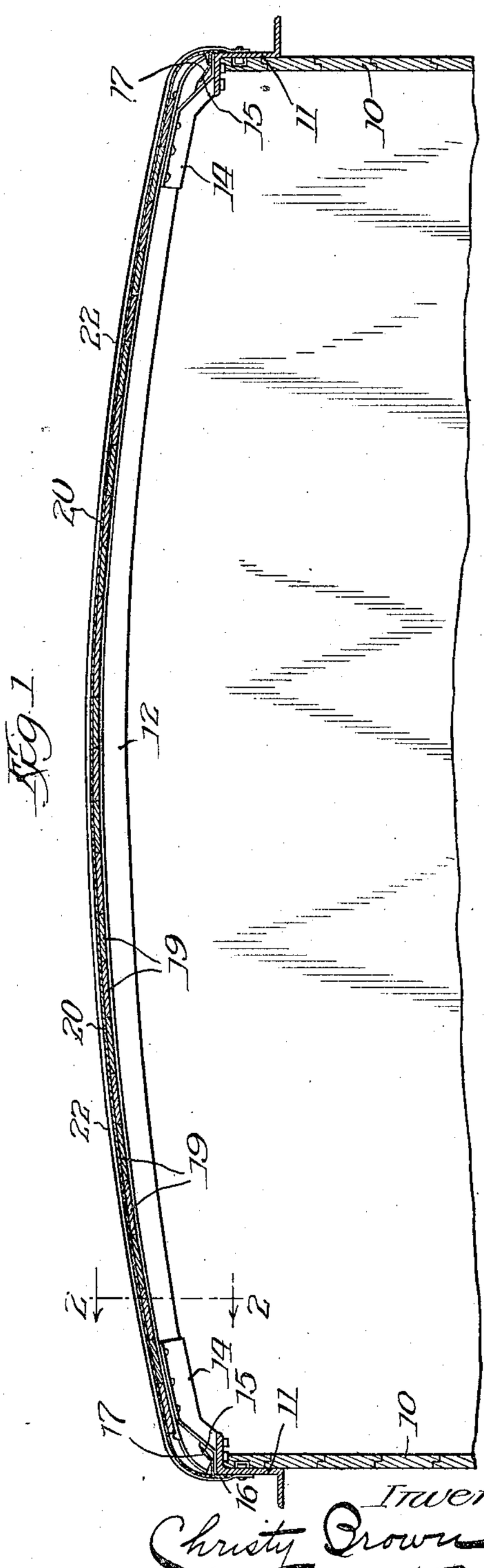

Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 3

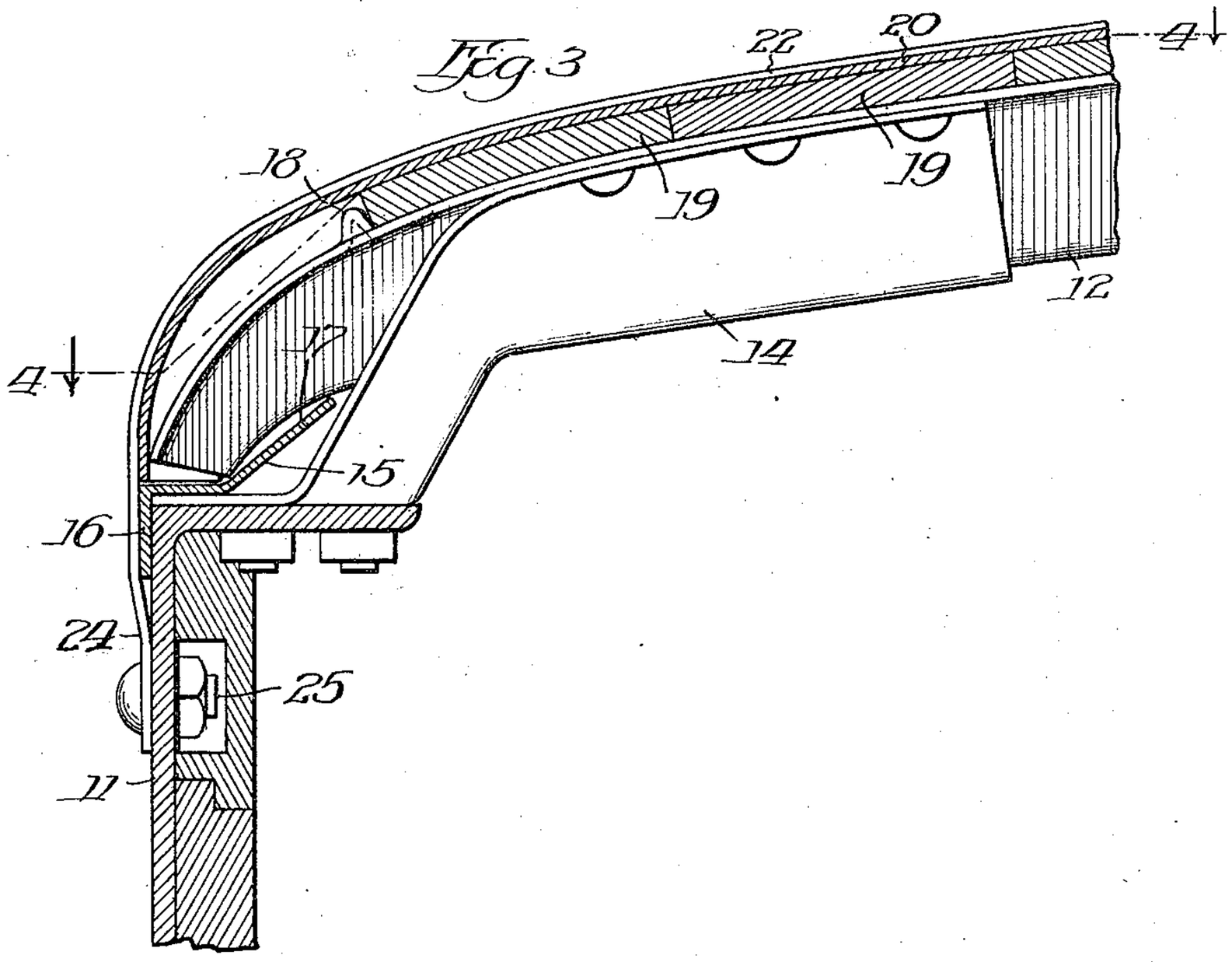
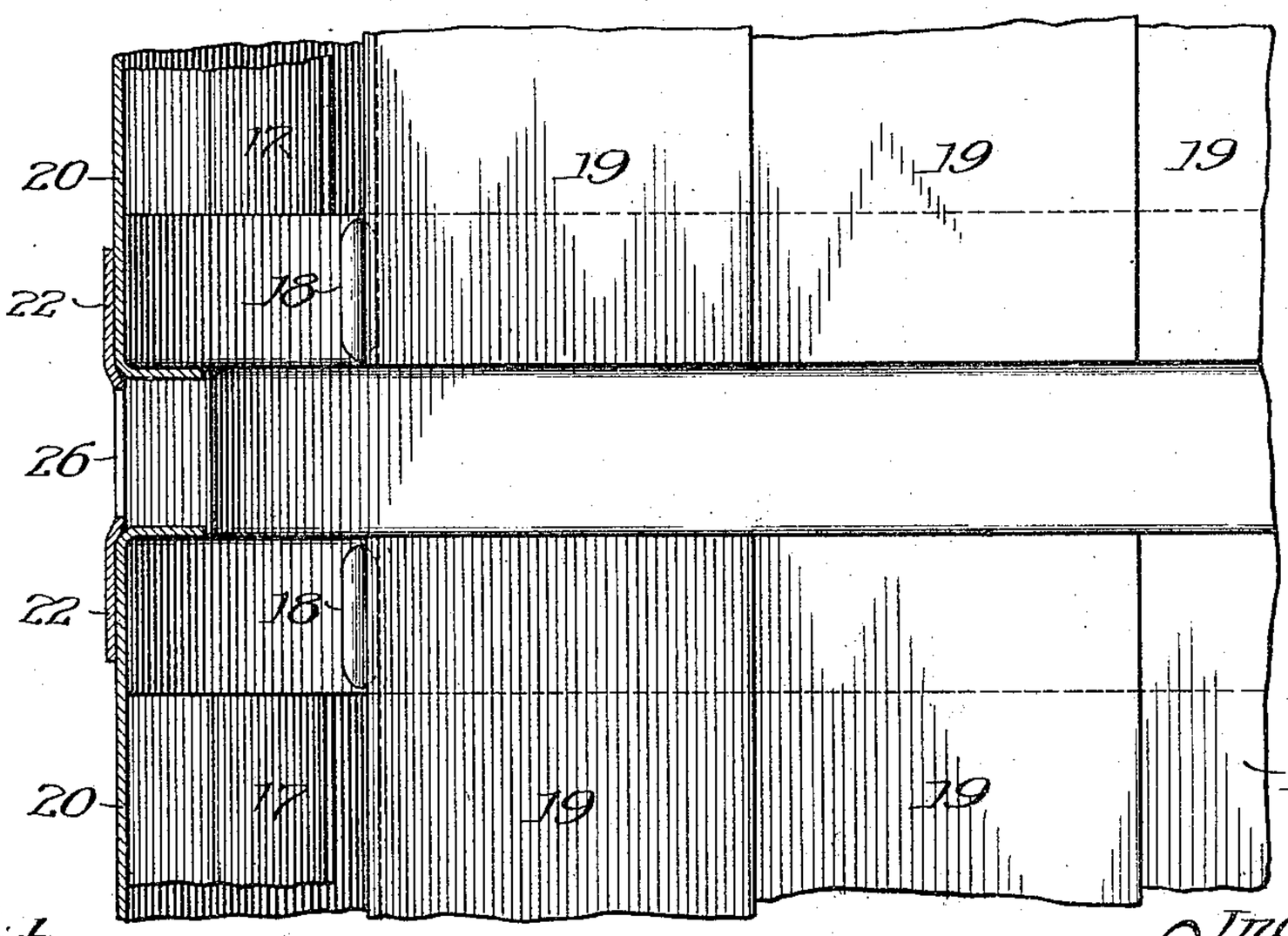


Fig 4.



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UNITED STATES PATENT OFFICE.

CHRISTY BROWN, OF WILMETTE, ILLINOIS, ASSIGNOR TO AMERICAN CAR ROOF COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

CAR-ROOF.

1,166,510. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed October 21, 1915. Serial No. 57,053.

To all whom it may concern:

Be it known that I, CHRISTY BROWN, a citizen of the United States, residing at Wilmette, 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.

Sheet-metal car-roofs, particularly those of a single thickness of metal, have the objection that there is a tendency for moisture and frost to collect on their under surface, which is likely, especially under the vibration of the car in traveling, and under the heat of the sun on the metal, to drip on the lading, giving it an unsightly appearance, if not actually damaging the goods.

It has been proposed heretofore to ventilate such a roof structure in an attempt to overcome this moisture-collecting or condensing propensity, but I have found that it is a much better plan to line the roof with a heat-insulating and, preferably, moisture-absorbing material, such, for example, as wood.

A further object of the invention is to so associate such wood lining with the metal roof elements that it may be readily put in and retained in place without bolts or rivets passing through the boards, and, in the preferred embodiment of the invention, these boards extend lengthwise the car only from carline to carline and are held in place directly by the metal roof-sheets, which are in turn supported by the boards.

With these and various other objects in view, in order that those skilled in the art may understand the invention, I have illustrated a desirable embodiment of the same in the accompanying drawings, throughout the various views of which like reference characters refer to the same parts.

In these drawings, Figure 1 is a cross-section through the roof structure; Fig. 2 is an enlarged fragmentary longitudinal section through the roof on line 2—2 of Fig. 1; Fig. 3 is an enlarged fragmentary cross-section of the portion of the roof adjacent to the side-wall; and Fig. 4 is a horizontal section on line 4—4 of Fig. 3.

As is customary in structures of this general character, at the top of each side-wall 10 of the car-body, there is a longitudinal Z-bar side-plate 11 having an outwardly-extended lower flange, and an inwardly-projecting upper flange. The carlines 12 are of channel form with outstanding top, marginal flanges 13, 13, the carlines preferably extending from side-wall to side-wall and being secured to the top flanges of the side-plates 11 by means of pressed-metal shaped brackets 14 conforming to the under surfaces of the end portions of the carlines and riveted thereto. An eave strip 15 is located above each side-plate 11 and has a downturned outer flange 16 and an inner inclined flange 17 disposed between the downwardly curved end of the carline and the adjacent portion of the bracket. That is to say, the carline, including its side-walls and its outwardly-projecting flanges 13 is bent down at the end, as is clearly shown in Fig. 3, and each flange 13 at any suitable point, but preferably above the side-plate, is pressed to form a boss or lug 18, for a purpose hereinafter indicated.

The lining of the roof comprises a series of boards, or other suitable members, 19, 19, disposed longitudinally of the car, resting upon the carline flanges 13, and extending only from carline to carline, as shown in Fig. 2, which permits the employment of relatively inexpensive lumber for this purpose. The outermost board at each side of the car is prevented from displacement by means of the stops 18, 18, and the other boards are merely laid in place, none of them having any fastening-means, such as nails, bolts, rivets, or the like, and, by reason of this construction the parts of the roof may be quickly and easily assembled.

The sheet-metal roof-plates 20 extend across the full width of the car and laterally only from carline to carline, each having at its opposite edges depending flanges 21, 21, projecting downwardly into the troughs of the carlines, these flanges, by coöperation with the ends of the boards, holding the latter properly in position and against substantial displacement. At the side of the car, each roof-plate, including its flanges, is curved downwardly to follow in general the curved contour of the corresponding portions of the carlines.

Each carline is provided with a cap or weather-strip 22 longitudinally depressed at 23, providing a rib extending between the roof-plate flanges 21 of adjacent plates and at each side of the car each cap-strip has a depending flat ear 24 secured to the side-

plate by means of bolts 25, each cap-strip just above the eave-strip having an aperture 26 (Fig. 4) for the discharge of any water which may find entrance to the trough of the carline, such liquid being delivered over the eave strip as will be readily understood from an inspection of Fig. 3.

The wooden or other lining 19 not only performs the function of a heat insulator and a moisture abosrbing element, but it also constitutes a support for the roof-sheets, assisting in carrying the load imposed on the latter. This wooden lining, owing to its insulating propensities, tends to prevent the formation of moisture and frost on the inner surface of the metal portions of the roof, but if such moisture accumulates or such frost melts it will act as an absorbent material, preventing the moisture from dripping and injuring the lading. It should also be noticed that those portions of the roof unprovided with the lining are composed of two metal parts, carline and cap-strip, separated from one another sufficiently to provide an air space which compensates for the absence of the lining at those places.

The structure presented herein represents merely a desirable way of incorporating the invention in practical form, but it is not to be understood that the invention is limited and restricted to the precise and exact structural features illustrated and described, because these may be modified within comparatively wide limits without departure from the substance of the invention as defined by the claims.

I claim:—

1. In a railway-car roof construction of the character described, the combination of metal carlines, heat-insulating members disposed lengthwise of the car, resting on and supported by said carlines, and each extending only from one carline to the next, said heat insulating members unitedly forming a roof lining, flanged, metal roof-sheets above said members and having their flanges extended downwardly across the ends of said members, the latter being restrained from lengthwise movement solely by such flanges, substantially as described.

2. In a railway-car roof construction of the character described, the combination of channel metal carlines disposed trough side upward and having oppositely-extended flanges at their top edges, boards disposed lengthwise of the car resting on and supported by said carline flanges, and each extending only from one carline to the next, and metal roof-sheets covering said boards and having marginal flanges projecting into the troughs of said carlines and coöperating with the ends of the boards to prevent substantial displacement of the latter, substantially as described.

3. In a railway-car roof construction of the character described, the combination of channel metal carlines, disposed trough side upward and having oppositely-extended flanges at their top edges, equipped with stops near their ends, boards disposed lengthwise of the car resting on and supported by said carline flanges and each extending only from one carline to the next, the outermost boards bearing against said stops, and metal roof-sheets covering said boards and having marginal flanges projecting into the troughs of said carlines and coöperating with the boards to prevent substantial displacement of the latter, substantially as described.

4. In a railway-car roof construction of the character described, the combination of flanged channel carlines, disposed trough side upward, wooden boards supported on said carline flanges, metal roof-plates having marginal flanges holding said boards against substantial displacement and projecting downwardly into the carline troughs, and cap strips above said carlines having portions extended between the roof-plate flanges and holding them separated, substantially as described.

CHRISTY BROWN.