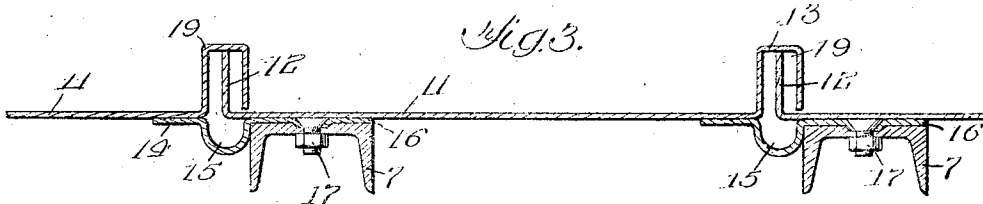
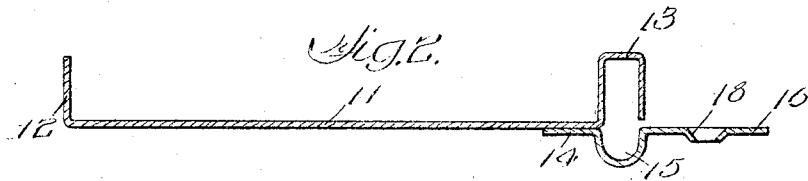
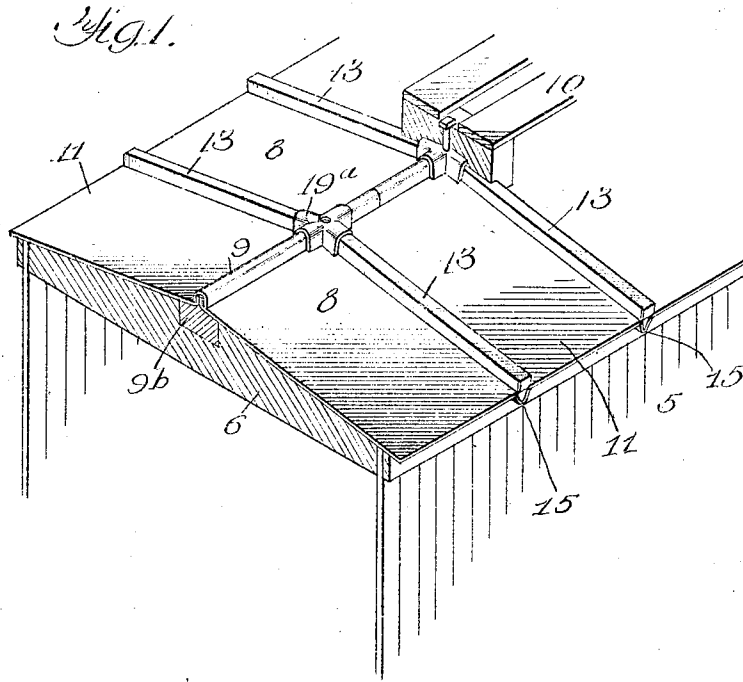


F. JAGER.
CAR ROOF.

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Patented Jan. 26, 1915.



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UNITED STATES PATENT OFFICE.

FRANK JAGER, OF CHICAGO, ILLINOIS.

CAR-ROOF.

1,126,638.

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To all whom it may concern:

Be it known that I, FRANK JAGER, 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, reference being had to the accompanying drawings.

My invention relates generally to roofing and more particularly to a new and improved metallic roofing in a railway freight car.

The principal objects of my present invention are the provision in a freight car of a new and improved metallic roofing which is not subject to distortion or weaving when the car receives rough handling; the provision of co-acting metallic roofing members in a car, each member being so constructed and arranged that when assembled sufficient play room is given the members thereby allowing for incidental torsion and strain; the provision of roofing members in a car provided with outer means designed to effect a yielding and at the same time water-tight connection at the juncture of the members, which together with supplementary inner means adapted to coöperate with the outer means render the roof positively weather proof; and in general the provision of novel roofing members which are simple in their construction and arrangement, and which when assembled results in an economical moisture proof roof construction.

These and such other objects as may hereinafter appear, or are incidental to my invention, I attain by means of a construction illustrated in preferred form in the accompanying drawings, wherein:—

Figure 1 is a perspective view of a portion of a car roof embodying my invention, part of the runway being removed.

Figure 2 is a cross section of one of the roof members.

Figure 3 represents a detail cross-sectional view through a portion of the roof, showing the means for fastening the sheets to the carline.

The employment of wood as the principal means of construction in outside roofs of railway freight cars is common and has gen-

erally proved unsatisfactory to the railroads and car companies, and such roofs when in service have developed many objectionable features, chiefly among them being their leaky condition, which condition is wide spread and well known.

It is customary for shippers of certain classes of freight liable to damage from moisture, to apply a hose test to cars placed for loading on their sidings. This test consists generally in spraying the roof with water under pressure, and the resulting condition of the roof determines their acceptance or rejection of the placed car. This practice has developed one fact, that approximately seventy-five per cent. of the cars provided with wood roofs subjected to this test were unable to withstand it without some degree of leakage. This has necessitated the use of outside metal roofs which are gradually being substituted for the roofs above referred to; but still in many cases these metal roofs have eventually been found loose and open at their joints, no provision having been made for distortion or strain incidental to rough handling when in service.

In many instances where through bolts have been used to secure the metal sheets to carlines or the like, the bolts have become loosened, allowing moisture to work under the head of the bolt and percolate into the car, and again in other instances the metallic roofs have been fastened at both their center and edges with the result that the roof had to give way somewhere under excessive strain.

These disadvantages have been entirely overcome by my improved construction, and it will be seen that I provide a series of metallic sheets which extend substantially from ridge to eaves and which overlap and interlock at their edges, yet at the same time permitting sufficient play room to allow for torsion and strain. In each sheet one edge is provided with an upwardly turned margin and the other edge with an upwardly rebent margin. The former is adapted to be inserted within the rebent margin at the adjacent edge of the next sheet, which rebent margin is so conformed as to afford sufficient play therein for the said bent margin.

While under ordinary circumstances this arrangement would be considered weather proof, yet under abnormal weather conditions it is possible that water can seep between two adjacent sheets at their covered edges. To this end I have provided a novel inner duct member which serves the double purpose of draining such seepage, and also as a fastening means, the fixed edge being arranged under the free edge of the next adjacent sheet thereby preventing any possible leakage into a car should the fastening means become loosened.

This will readily be seen by referring now more particularly to my preferred construction as illustrated in Figure 1 in which I provide a car body 5, supporting roof members 6, and carlines 7. Extending from ridge to eaves of the car are a series of outside roofing members 8, the upper ends being covered in by a cover plate 9 extending longitudinally the roof of the car, and caps 9^a which are bolted to the ridge post 9^b. A runway 10 rests upon the cover plates and caps and is secured to the car body in the usual manner.

Each of the roof members 8 is provided with an outer sheet 11 having at one edge an upwardly bent margin 12 and at the other edge an upwardly rebent margin 13 substantially as illustrated in Figures 2 and 3. The lower end of the outer sheet may be lapped over the siding and the lapped end secured in any suitable manner if desired. Preferably welded adjacent one edge to the under surface of the sheet 11 and on a line intermediate the margins is an inner sheet 14 corresponding in length to the outer sheet 11 and provided with a channel or duct 15 extending along its length, said channel being positioned under and opposite the rebent margin 13. The inner sheet extends beyond the rebent margin as at 16 and is adapted to be secured to a carline 7, leaving the edge 12 free.

In the successive steps of placing the roof members 8 in position to form a complete roof covering, one of the members is secured to a carline by bolts 17, the heads of which are accommodated in a recess 18 provided in the extension 16 of the inner sheet 14, the heads of the bolts being flush with the surface of the extension. The bent margin 12 of the first member laid in position is lapped down and secured to the car. The next member is then placed in position, the margin 12 fitting snugly within the shaped recess 19 formed by the rebent margin 13. The recess is so conformed that while the upper edge of the margin 12 bears against the center line of the inner surface of the rebent margin, there is ample play room to permit relative movement of the members,

as will be readily seen from an inspection of the drawings.

This second sheet rests in part upon the surface of the inner sheet extension 16, and is then fastened at its far edge in the manner already described, the next member is then placed in proper position and this operation is continued until the roofing is completed. By this method all the fastening means in one sheet are covered over by the adjacent sheet in an economical manner and should any bolts become loosened, no water can possibly work into the car past their heads. The rebent margin being substantially of an inverted U shape allows for relative movement of the bent margin therein without which the roof would be subject to rupture. The rebent margin in bearing upon the upper edge of the bent margin effectually holds down the free edge of the sheet against displacement, without interfering in any way with relative movement of the sheets. Any moisture seeping past the upwardly bent margin is caught and drained by the channel.

The construction is inexpensive and strong, and capable of withstanding the hardest service conditions. Other advantages will occur to those skilled in the art.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent is the following:—

1. In a car roof, the combination with a roof supporting means, of a plurality of roofing sheets united together at their side edges by loose, high-standing joints composed each of an upturned flange on the side edge of one sheet and a rebent portion on the side edge of the adjacent sheet, and an underlying sheet attaching member connected with one of the sheets and extending past the joint to rest up against the underside of the adjacent sheet and upon the said roof supporting means, the web portion of the sheet attaching member being depressed substantially throughout its length to form a trough disposed below the plane of the roof and beneath the said joint, substantially as described.

2. In a car roof, the combination with a roof-supporting means, of a plurality of roofing sheets united together at their side edges by loose, high-standing joints composed each of an upturned flange on the side edge of one sheet and a rebent portion on the side edge of the adjacent sheet adapted to fit over the said upturned flange, and an underlying sheet attaching flange connected with one of the sheets and extending past the joint to rest up against the underside of the adjacent sheet and upon the roof supporting means for attachment thereto, and having

its web portion depressed substantially throughout its length to form a trough or channel disposed below the plane of the roof and beneath the said joint, the said rebent
5 portion acting to hold the adjacent sheet down in position on the sheet attaching flange.

In testimony whereof I have hereunto signed my name in the presence of the two subscribed witnesses.

FRANK JAGER.

Witnesses:

W. HERBERT FOWKES,
M. H. ERICSON.