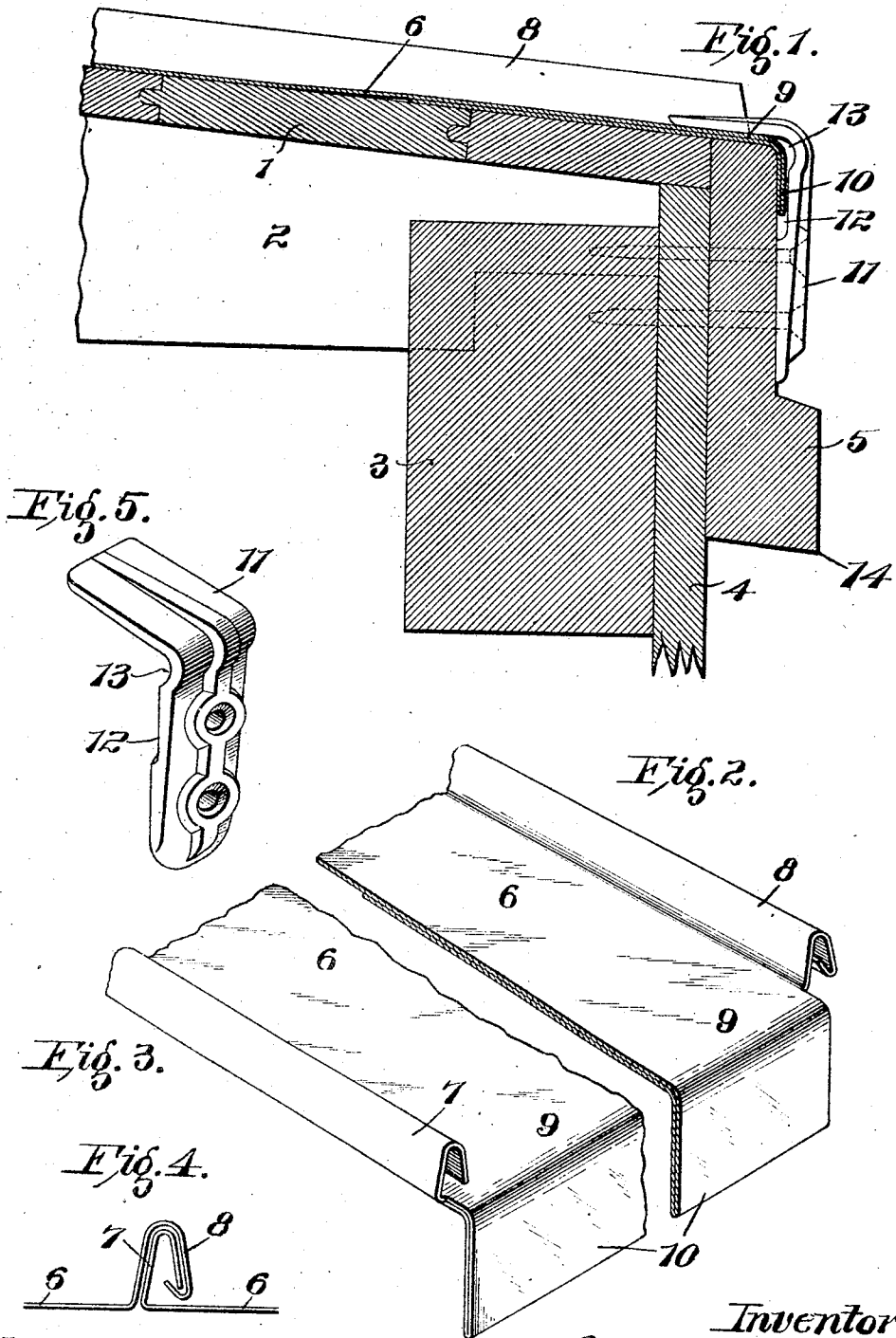


J. J. HOFFMAN.
OUTSIDE CAR ROOF.
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915,352.

Patented Mar. 16, 1909.



Witnesses:
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UNITED STATES PATENT OFFICE.

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OUTSIDE CAR-ROOF.

No. 915,352.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN J. HOFFMAN, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented a new and useful Improvement in Outside Car-Roofs, of which the following is a specification.

In the practical use of outside metal car roofs wherein the roof sheets are turned down at the eaves and secured by clips, the roof sheets sometimes rust or wear out below the clips. Besides, the corners of the downturned flange are liable to curl outwardly and thereby become exposed to injury; and also the roof sheets are likely to tear crosswise just above the downward bend, the tears beginning at the side edges of the sheet.

My invention relates to outside metal car roofs and has for its principal objects to overcome the tendencies to develop the above defects.

The invention consists principally in doubling back the roof sheet at the eaves to stiffen the flange, reinforce the edges of the sheet, and offer a suitable anchorage and flashing for the sheet when the top thickness thereof wears through.

It also consists in the combination and arrangements of parts hereinafter described and claimed.

In the accompanying drawing, which forms part of this specification, and wherein like symbols refer to like parts wherever they occur, Figure 1 is a vertical cross sectional view of the upper side portion of a car equipped with my roof; Fig. 2 is a perspective view of the outer end portion of the right hand side of the roof sheet; Fig. 3 is a perspective view of the left hand side of the outer end portion of said roof sheet; Fig. 4 is a view of the standing seam or interlocking portion of adjacent roof sheets; and, Fig. 5 is a perspective view of the clip.

According to the present invention, the substructure of the car roof is of any suitable type. As illustrated, it comprises a wooden sheathing 1 resting upon carlines 2 which are supported upon the side plates 3 of the car. The roof sheathing preferably overlaps the side sheathing 4 and terminates flush with the outer surface thereof; and the eaves fascia 5 is mounted at the top of the side sheathing and has its upper end flush with the roof sheathing.

The metal sheets 6 are arranged trans-

versely of the car and are connected together by any suitable type of standing seam. Preferably, the roof sheets are provided on one margin with a flange 7 which turns upwardly and thence inwardly and thence downwardly terminating adjacent to the underlying portion of the roof sheet. The opposite edge of the sheet is provided with a flange 8 which is bent upwardly and then outwardly and then downwardly, and then again upwardly and inwardly. The lowermost portion of this flange 8 is slightly lower than the lowermost edge of the flange 7 on the opposite side of the sheet. By this arrangement, the flange 8 on the edge of one sheet is adapted to interlock with the flange 7 of the adjacent edge of the next sheet, whereby the sheets are flexibly and slidably connected together. Any suitable means may be used for flexibly or movably securing the sheets at the ridge.

The outer portion 9 of each sheet is rebent or folded back against the under side of the sheet from a point beyond the end of the side flanges; and, preferably, the side marginal portions of each sheet are cut off flush with the line along which said flanges are bent up. The doubled portion of the roof sheet is bent downwardly over the rounded edge of the fascia forming a depending flange 10.

The roof sheets are held at the eaves by means of angular clips 11 which are secured to the fascia below the downturned flange 10 of the roof sheets and whose inwardly projecting portions overlap the edge portion of the roof sheets without binding them too tightly to permit sliding thereof. In order to prevent the binding of the eave flange of the roof sheet, the inner face of the upper portion of the clip is recessed or offset (as shown at 12) and the angle of the clip is further recessed by a curved transverse groove 13 which will permit the curling or buckling of the roof sheets at this point. The rebent end portion of the sheet extends inwardly toward the ridge some distance beyond the innermost portion of the clip. The lower portion of the eaves fascia preferably extend outwardly far enough beyond the upper portion and the clips thereon to protect them against scraping. The lower surface of this fascia is preferably inclined downwardly and outwardly to form a sharp edge 14 which will facilitate the dripping of

the water therefrom and thereby prevent the water from running onto the side of the car.

By reason of the double thickness of metal extending inwardly some distance beyond the end of the clip, the inner thickness serves as a flashing in case the outer face is worn through. It also cooperates with a clip in such case and thereby, acting through the stiff eave flange, serves as an anchorage to prevent the lifting of the roof sheet. In like manner, the double thickness serves to reinforce the roof sheet against the tendency to tear adjacent to the eaves. So, too, the double thickness tends to prevent the outward curling of the downturned corners of the eave flange and thus protect said flange against exposure.

Obviously, the device admits of considerable modification without departing from my invention, and therefore, I do not wish to be limited to the specific construction shown and described.

What I claim as my invention and desire to secure by Letters Patent is:

1. A car roof comprising metal roof sheets which are doubled back at the outer end and have the double portion turned down over the eaves.
2. A car roof comprising metal roof sheets connected by interlocking flanges extending from the eaves toward the ridge, the outer portion of said sheets being doubled back and the double portion being turned down over the eaves.
3. A car roof comprising metal sheets flexibly connected by interlocking flanges extending from the eaves toward the ridge, the outer portion of each sheet being doubled back on itself and the double portion being turned down over the eaves.
4. A car roof comprising a substructure, metal sheets extending crosswise thereof and connected at their sides by interlocking flanges, and clips overlapping said sheets at the eaves and secured to the substructure, the outer portion of each sheet being doubled back far enough to present a double thickness of metal for some distance upwardly from the eaves.
5. A car roof comprising a substructure, metal roof sheets extending crosswise thereof and connected at their sides by interlocking

flanges, and clips overlapping said sheets at the eaves and secured to the substructure without perforating said sheets, the outer portion of each sheet being doubled back far enough to present a double thickness of metal below the innermost part of the clip.

6. A car roof comprising a substructure, metal sheets extending crosswise thereof and slidably connected at their sides by interlocking flanges, and clips overlapping said sheets at the eaves and secured to the substructure, the outer portion of each sheet being doubled back far enough to present a double thickness of metal for some distance upwardly from the eaves.

7. A car roof comprising a substructure, metal sheets extending crosswise thereof, and connected at their sides by interlocking flanges, and clips overlapping said sheets at the eaves and secured to the substructure to form recesses, said sheets having their outer portion doubled back flatwise against the body portion far enough to present a double thickness below the innermost parts of the clip and having the double portion turned down at the eaves in the recesses between the side of the substructure and said clips.

8. A car roof comprising a substructure, metal sheets extending crosswise thereof and connected at their sides by interlocking flanges and clips overlapping the sheets at the eaves and secured to the substructure, said sheets having their outer portions doubled back flatwise against the body portion far enough to present a double thickness below the innermost parts of the clips and having the doubled portion turned down at the eaves in the recesses between the side of the substructure and said clips, said clips having the upper portion of their inner faces recessed to prevent binding against the downturned flange of the roof sheet and having a transverse groove in the angle to permit curling of the roof sheet at the edge of the roof.

Signed at St. Louis, Missouri, this 25th day of June, 1908.

JOHN J. HOFFMAN.

Witnesses:

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