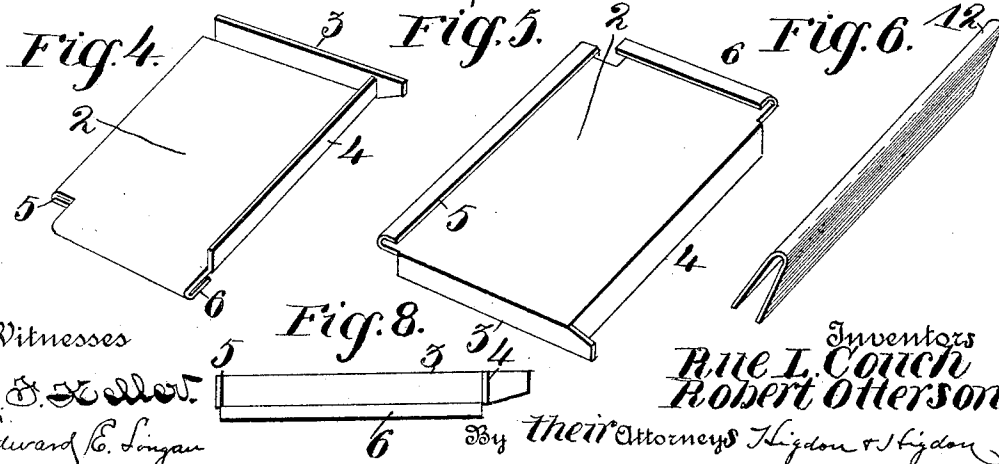
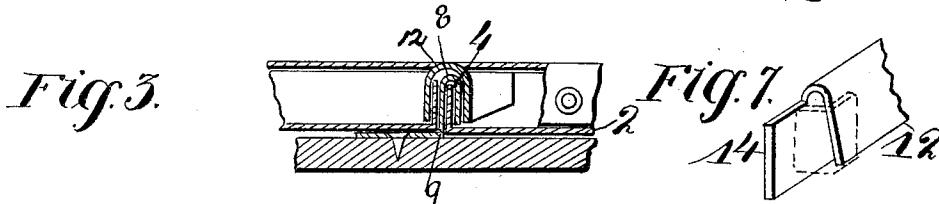
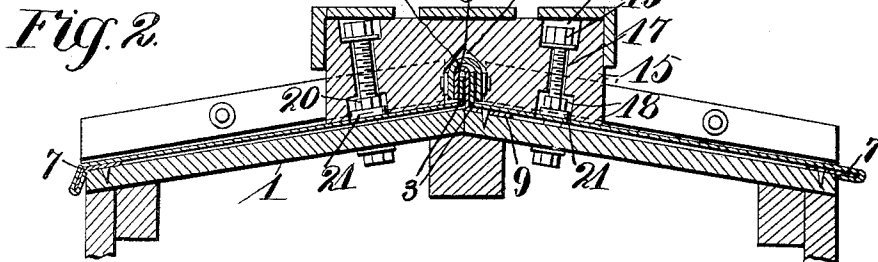
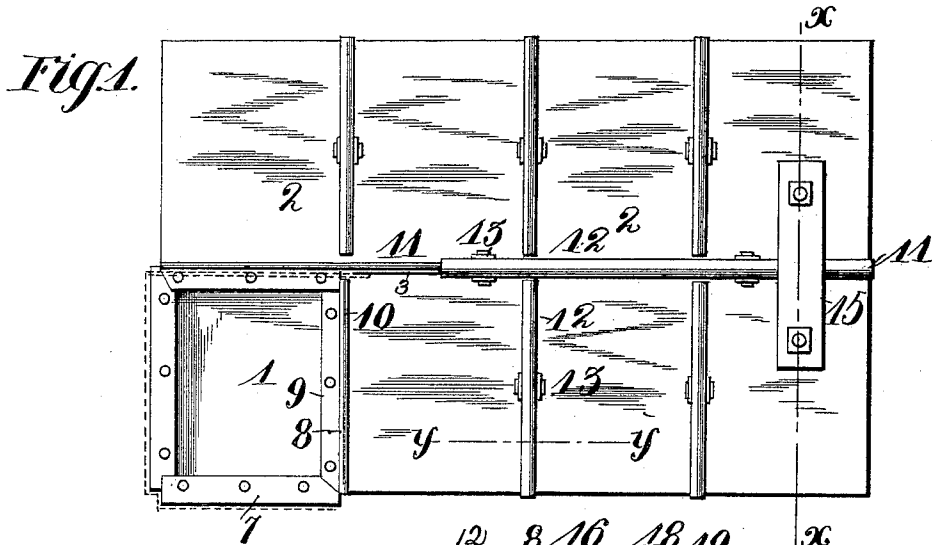


(No Model.)

R. L. COUCH & R. OTTERSON.
CAR ROOF.

No. 462,375.

Patented Nov. 3, 1891.



Witnesses

D. S. S. S. S.
Edward E. S. S.

Inventors
Rue L. Couch
Robert Otterson.
By their Attorneys Higdon & Higdon

UNITED STATES PATENT OFFICE.

RUE L. COUCH AND ROBERT OTTERSON, OF ST. LOUIS, MISSOURI.

CAR-ROOF.

SPECIFICATION forming part of Letters Patent No. 462,375, dated November 3, 1891.

Application filed April 7, 1891. Serial No. 387,942. (No model.)

To all whom it may concern:

Be it known that we, RUE L. COUCH and ROBERT OTTERSON, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Car-Roofs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates to improvements in car-roofs; and it consists in the novel arrangement and combination of parts, as will be more fully hereinafter described, and designated in the claims.

In the drawings, Figure 1 is a top plan view of a car having our invention applied thereto with one of the sheets removed. Fig. 2 is an enlarged transverse section, taken on the line *xx* of Fig. 1. Fig. 3 is a transverse section taken through one of the sideribs on the line *yy*. Fig. 4 is a perspective view of one of the end sheets, which we employ in carrying out our invention. Fig. 5 is a perspective view of the same sheet inverted, and Fig. 6 is a perspective view of a cap which we employ in carrying out our invention. Fig. 7 is a perspective view of one of the side ribs. Fig. 8 is an end view of one of the intermediate sheets, showing one of the bent portions turned upward.

Referring to the drawings, 1 indicates the wooden portion of the roof, which is of the ordinary construction, and 2 the galvanized-iron sheets, with which we preferably cover the roof. Said sheets are formed as shown in Figs. 4 and 5, the same being provided with upturned portions 3 and 4 and also with bent portions 5 and 6.

7 indicates securing-strips, which are secured to the wooden portion and project beyond the edges of same, as shown in Figs. 1 and 2, and over these strips the bent portions 5 and 6 of sheets 2 may be slipped.

8 indicates U-shaped caps, provided with the right-angled portions 9, which portions are secured to the wooden portion of the roof. Said caps are adapted to fit over the upturned portions 4 of sheets 2, as can be readily perceived by referring to sectional Fig. 3, and also adapted to fit over the upturned portions 3, as can be readily seen by referring to Fig. 2. The sheets 2 are all made about the same form throughout the entire roof and are laid on the wooden portion of the roof with the

upturned portions 4 running transversely and the upturned portions 3 longitudinally with the roof, thereby forming a series of side ribs 10 and a longitudinal rib 11.

12 indicates a supplemental cap, which is adapted to be placed over ribs 10 and 11 and is secured to the upturned portions of sheets 2, and also to pieces 8, by means of rivets or bolts 13, thereby forming a rigid and substantial rib.

From the construction, as hereinbefore stated, it can be readily perceived that the sheets 2, when located in their normal position on the roof, cover up all the nail-heads arising from securing strips 7 and 8 to the wooden portion of the roof, or, in other words, sheets 2 are not secured directly to the roof, but are held on the roof by means of the strips 7 and 8 and the supplemental caps 12 and rivets 13. The strips 7, and consequently the bent portions 5 and 6 of sheet 2, may be bent down on the edges of the wooden portion of the roof, as shown to the left in Fig. 2, or the same project outwardly, as shown to the right in said figure. Either form of construction could be used at the discretion of the builder. The supplemental caps 12 are provided with projecting portions 14, and the same are bent over the ends of said cap, as shown in dotted lines in Fig. 7, thereby closing the end of said cap. By the location of the sheets, as hereinbefore described, a continuous central rib 12 is formed.

15 indicates braces for supporting the roof, the same being provided with a V-shaped recess 16, adapted to fit over the central rib 11, and with perforations 17, terminating in square or angular sockets 18. We generally employ three of these braces for one car. Said braces are secured to the roof by means of bolts 19. Said bolts are inserted from below, pass upwardly through the roof, and are secured rigidly to the same by means of nuts 20.

21 indicates soft metallic washers—such as lead—which are interposed between the exterior surface of the metallic roof and nuts 20. Said nuts are adapted to fit in the square sockets 18, formed in braces 15, whereby they are prevented from working loose. The soft metallic washers 21, interposed as hereinbefore described, form a water-tight joint, thereby preventing the access of any water

into the interior of the car through the perforations in the roof through which bolts 17 are inserted. The braces 15 may also be used as supports for the running-board. In other words, they have two functions: to brace the roof, and also are supports for the running-board.

By the construction as herein set forth it can be readily perceived that the entire exterior surface of the wooden portion of the roof is protected from rain, snow, &c. Even the edges of the same are protected by means of the drip edges or strips 7 being bent over the same.

Having described the different parts of the roof, it is only necessary to state that ordinary judgment will suggest the manner of laying the same and uniting the parts together.

Having fully described our invention, what we claim is—

1. The hereinbefore-described metallic roof, composed of securing-strips 7, adapted to be attached to a suitable support, plates 2, engaged by the said strips, flanges 4 on said plates, strips 8, secured to the support and having a U-shaped portion overlapping flanges 4, a cap 12, covering flanges 4 and strips 8, and rivets passing through the cap, flanges, and strip, substantially as described.

2. The hereinbefore-described metallic roof, composed of a suitable support, U-shaped securing-strips 8, attached to the upper surface thereof, plates 2, covering the said support and having flanges 4, covered by the said securing-strips, a cap 12, covering the said flanges 4 and strips 8 and provided with a

projecting covering end 14, and rivets passing through the said cap, the flanges, and the securing-strip, substantially as described.

3. The hereinbefore-described metallic roof, composed of a suitable base having a strip 7, secured thereto and projecting therefrom, and of metallic plates having their edges bent parallel with the main portion thereof, engaging the outer projecting edges of said strip 7 and covering the same, substantially as described.

4. The combination of the herein-described metallic roof with braces 15, provided with a V-shaped recess 16, adapted to fit over the central rib of the roof, and angular sockets 18 for locking the nuts to the retaining-bolts, retaining-bolts passing through the said roof and braces, and soft metallic washers 21 for forming a water-tight joint where said retaining-bolts pass through the roof, substantially as set forth.

5. The herein-described metallic - roofing sheet, provided on two adjacent edges with portions 5 and 6, bent parallel with the main portion of the plate, and on the remaining edges with flanges 3 and 4, formed on the opposite side of the sheet to that upon which the portions 5 and 6 are located, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

RUE L. COUCH.
ROBERT OTTERSON.

Witnesses:

C. K. JONES,
C. F. KELLER.