

G. E. KNEPPER.

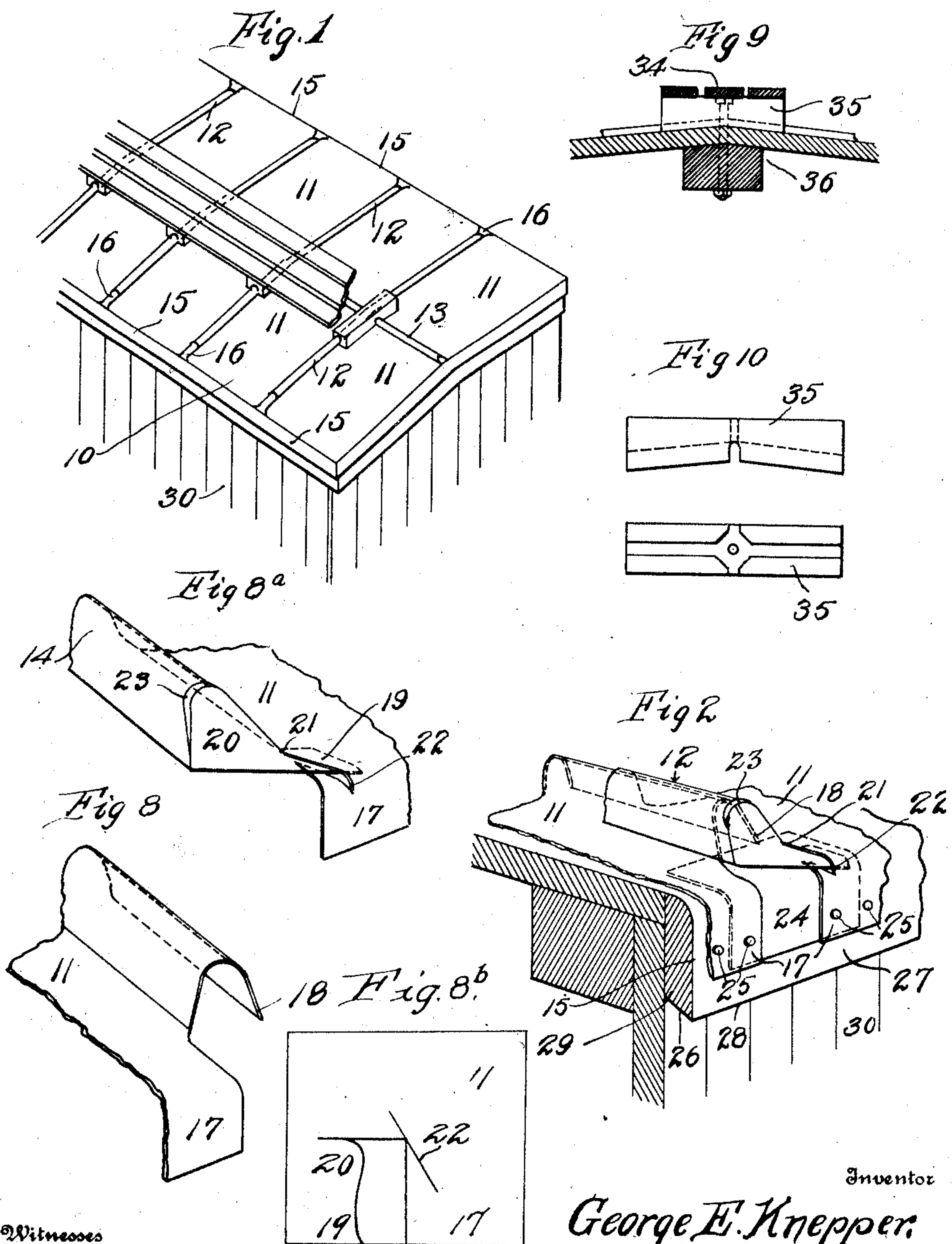
CAR ROOF.

APPLICATION FILED NOV. 30, 1908.

984,092.

Patented Feb. 14, 1911.

3 SHEETS—SHEET 1.



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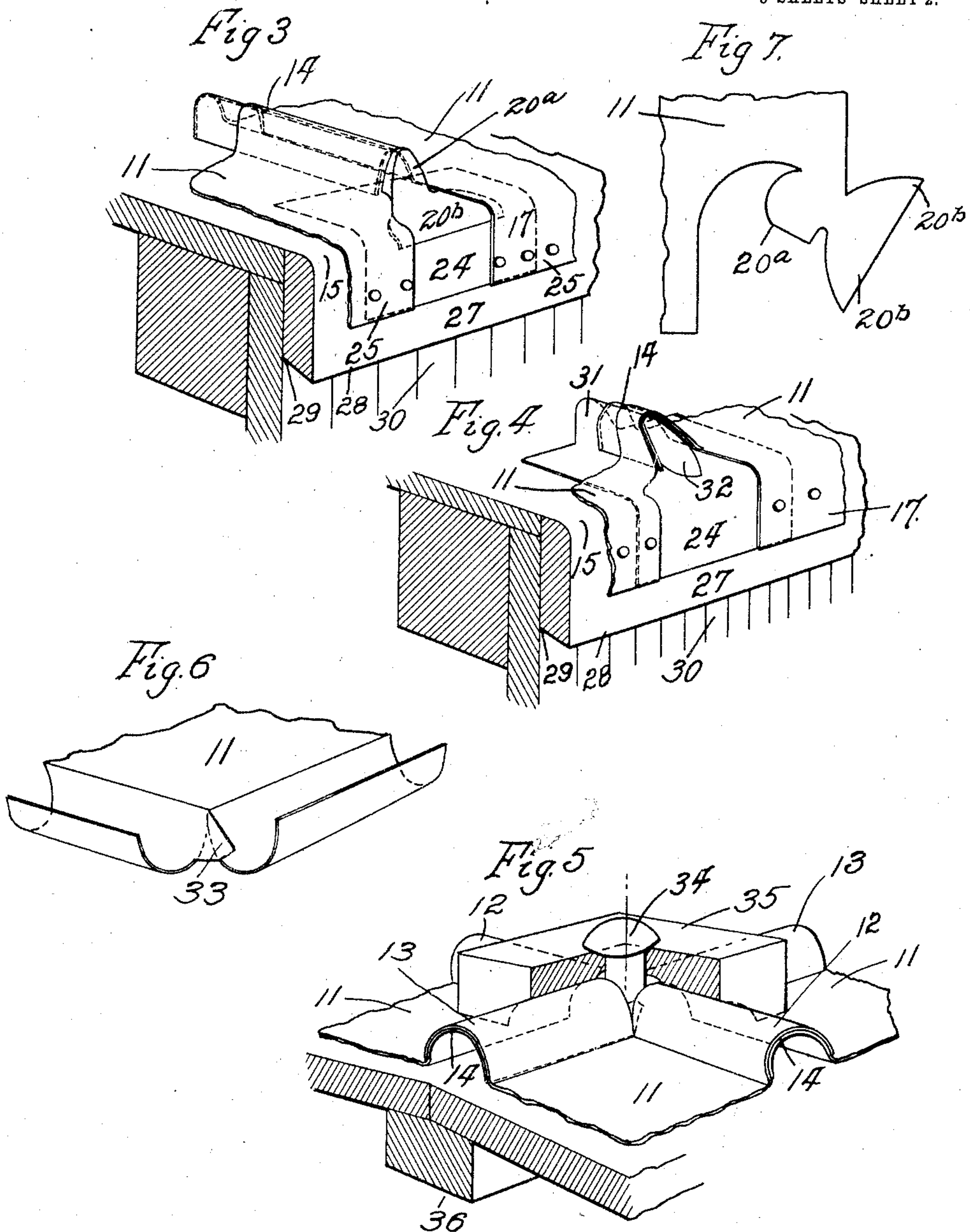
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 11

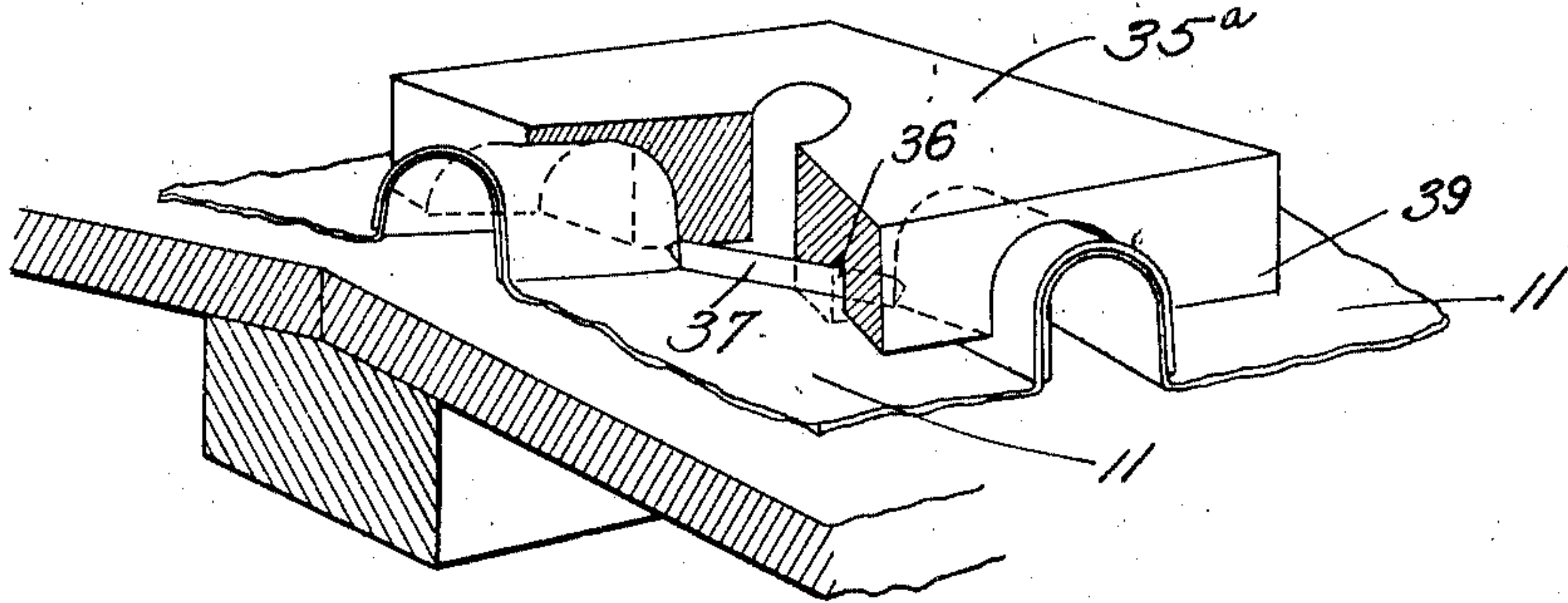


Fig. 12

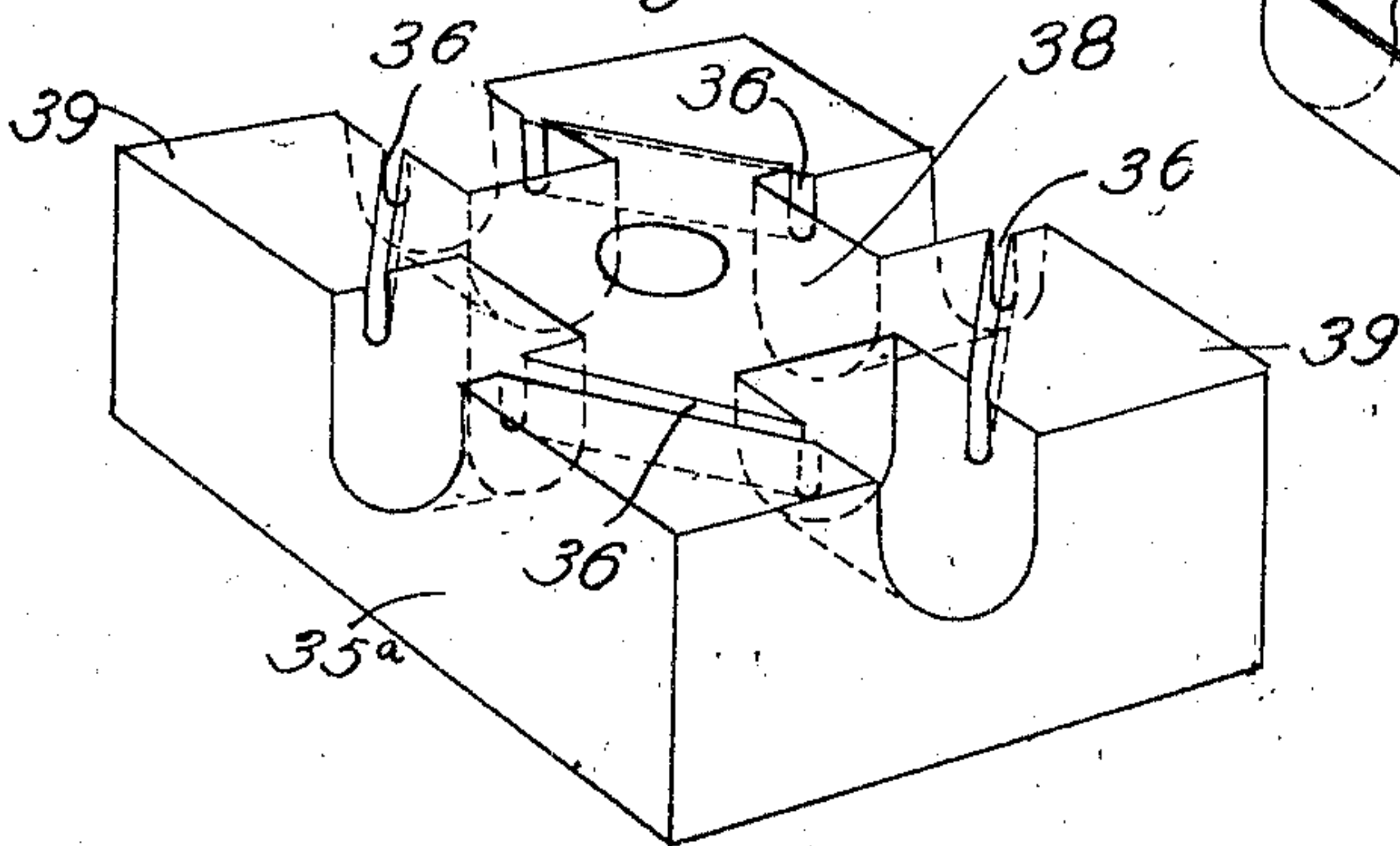
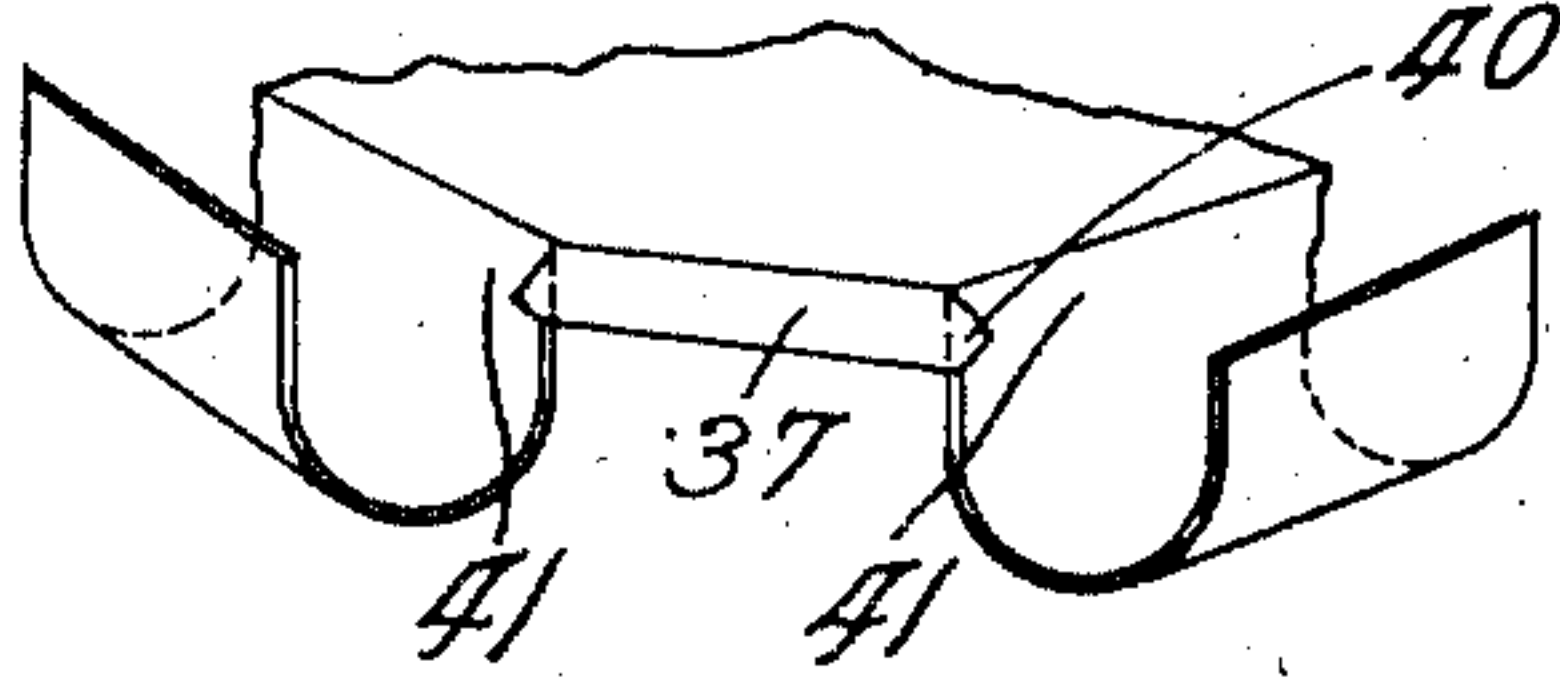


Fig. 13



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UNITED STATES PATENT OFFICE.

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CAR-ROOF.

984,092.

Specification of Letters Patent.

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Application filed November 30, 1908. Serial No. 465,373.

To all whom it may concern:

Be it known that I, GEORGE E. KNEPPER, a citizen of the United States, residing at Altoona, in the county of Blair and State of Pennsylvania, have invented certain new and useful Improvements in Car-Roofs, of which the following is a specification.

This invention relates to an improved water-tight metallic roofing for railway vehicles.

General objects of the invention are to provide a car-roofing which obviates the use of any metallic strips, caps, or housings other than the metal roofing sheets themselves, and to so construct the end of the joints as to set back from the edge of the car roof and thereby clear obstructions.

A further object of the invention is to provide means whereby the individual sheets of the roof may readily be taken out and replaced should one of the same become damaged.

Another object of the invention is to provide means for conducting the water away from the side of the car after it has left the eaves of the roof, thus contributing in a very practical way to the life of the sides of the car, the paint, and the prevention of damage to the goods inside the car.

With the above and various other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts as are hereinafter more fully pointed out, illustrated and claimed.

It will be readily understood that the various structural features of the invention are susceptible to modifications without departing from the scope of the invention, but certain preferred embodiments of the same are shown in the accompanying drawings, wherein:

Figure 1 is a perspective view of a portion of a car, the roof of the same having the improved covering applied thereto. Fig. 2 is a detail perspective view of a portion of a car roof showing the manner of making the joint at the eaves thereof. Fig. 3 is a view similar to Fig. 2, but showing a modification thereof. Fig. 4 is a detail perspective view of a still further modification of the joint shown in Fig. 2. Fig. 5 is a detail perspective view, partly in section showing the joint between the sections of the covering at the center of the car roof. Fig. 6 is an

inverted perspective view of one of the sheets shown in Fig. 5. Fig. 7 is a plan view of one of the sheets cut to form the joint end shown in Fig. 3. Figs. 8 and 8^a are detail perspective views of two of the sheets showing the cuts therein to adapt the same for forming the joint end shown in Fig. 2. Fig. 8^b is a plan view of the blank from which the sheet shown in Fig. 8^a is formed. Fig. 9 is a cross-section of a portion of the car roof showing the manner in which the block shown in Fig. 5 is fitted to the car with relation to the running board of the same. Fig. 10 is a side elevation and plan of the center block shown in Figs. 5 and 9. Fig. 11 is a view similar to Fig. 5, but showing the application of a slightly modified form of saddle block. Fig. 12 is a perspective view of the block shown in Fig. 11. Fig. 13 is a perspective view of one of the sheets shown in Fig. 11.

Like characters of reference designate corresponding parts in the several figures of the drawings.

In applying the improved roof covering to a car, no change is necessary in the roof framing, nor in the sides of the car, thus contributing in a very practical way to its use and adoption.

The improved roofing is made up of rectangular matching metal sheets 11 joined together by transverse longitudinal seams 12 and the longitudinal seams 13. The seams 12 are made by the union of two adjacent sheets 11 whose edges are bent into approximately inverted U-shaped beads 14 which interlock, one within the other, as shown in Figs. 2, 3 and 4.

At the eaves 15 of the car body the interlocking beads 14 of the sheets 11 are cut back as best shown at 16 in Fig. 1 to provide ample clearance between the car roof and obstacles along the roadway. This construction obviates the use of any cape or covering that protrudes above the eaves of the roof to be torn off while the car is in motion.

The method of forming the joint at the eaves of the car roof is shown in Figs. 2, 8 and 8^a. As shown in the figures of the drawings, the separate adjoining sheets 11—11 are provided with dependent leg portions 17 which are bent down over the edge of the car roof and secured to the facing board 27, as indicated at 25 in Figs. 2, 3 and 4 of the drawings.

Before the sheet 11 shown in Fig. 8^a is

bent as shown in that figure, it is cut so as to permit an offset leg 19 to engage with a keeper notch 22 previously made in the sheet. After the leg 19 is placed in position, the seam closing wing 20 is bent back to the inverted U-shaped joint, and the top portion 23 is flanged over the joint 12 as shown in the drawings.

Previously to turning the edge 23 over the top of the joint 12, the auxiliary filling strip 24 is placed in position, after which the ends 17 of the sheets are secured to the side of the car as plainly shown in Figs. 2, 3 and 4.

In addition to constructing the roof in this manner, the edge 26 of the facing board 27 is undercut to provide an edge 28 that is lower than the edge 29 adjacent to the car. This construction causes the water to drip from the edge 28 without running down the side 30 of the car.

In the modified form of the joint shown in Fig. 3, an integral seam-closing plate 20^a is employed whose base 20^b has its end portions clamped beneath the opposite legs 17.

A still further modification is shown in Fig. 4, in which the sheet 24 is formed with the struck up central rib 31 which gradually slopes off as at 32 and merges into the sheet 24, thus forming a seam-closing plate 32 that prevents the penetration of snow, ice and water.

The union of the four sheets at the top of the car is illustrated in Fig. 5 of the drawings. As shown, the sheets 11 are held by the binding bolt 34 which passes through the binding block 35 to the inside 36 of the car. And, as shown in Figs. 6 and 13 it will be seen that the plates are provided with corner lips 33 and 37 respectively to form a pan shaped structure which readily fulfils the purpose for which it was designed.

A modified form of union of the four corners of the sheet 11, at the top of the car is shown in Fig. 11 in which the saddle block 35^a is notched at 36 to receive the upturned web 37 of the sheet 11. The central portion 38 of the saddle block 35 is constructed so as

to project below the outer corners 39, thus allowing the block to be drawn down tight on the superstructure of the roof before the corners 39 engage the sheets 11 of the car roof, thus preventing, in a practical manner, all undue strains on the sheets and likewise the joints. The diagonal unturned strips or webs 37 being formed integral with the sheets 11, and the corners 40 being bent back the side 41 of the sheet 11 to form a pan, in combination with the above described binding or saddle block, through which passes the binding bolt 34, serves to form a joint at the top of the car that is water tight, and at the same time holding the parts in place without undue pressure being brought to bear on the sheets themselves.

From the foregoing description taken in connection with the drawings, it is thought that the many advantages herein represented are readily seen without further elaboration.

I claim:

1. A metallic roofing for cars comprising a plurality of metal sheets provided at their meeting edges with interlocking beads forming seams, and certain of said sheets being provided with integral seam-closing members arranged to be bent over the ends of the seams to close the latter contiguous to the eaves of the car body.

2. A metallic roofing for cars comprising a plurality of metal sheets provided at their meeting edges with interlocking beads which are cut away contiguous to the eaves of the car body to provide clearance along the roof contiguous to the eaves, certain of said sheets being provided with integral seam closing members arranged to be bent over the ends of the seams formed by said beads to provide for closing the seams contiguous to the eaves of the car body.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

GEORGE E. KNEPPER.

Witnesses:

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