

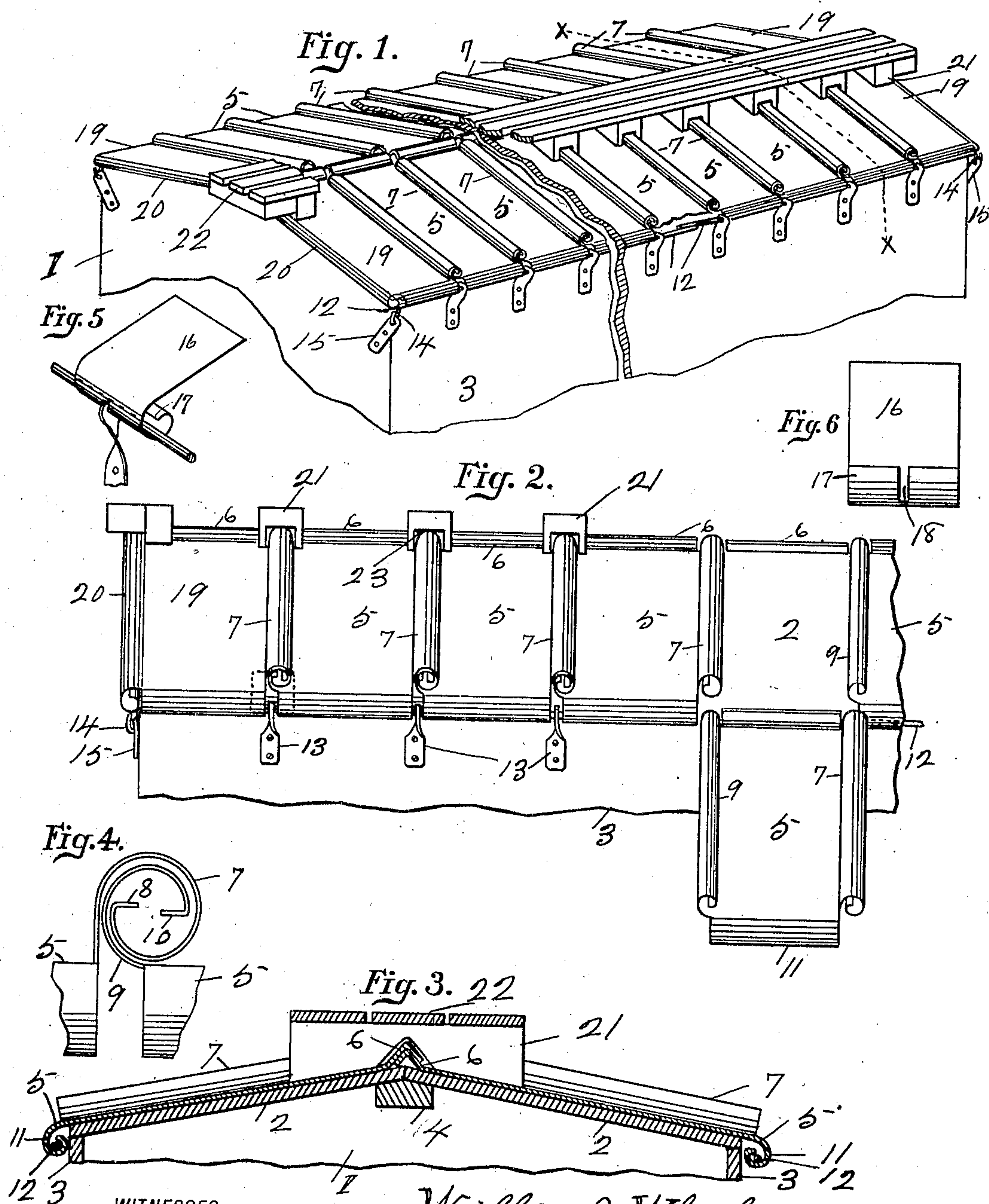
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W. J. WHEELER.

CAR ROOF.

APPLICATION FILED NOV. 6, 1906.



WITNESSES:

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WILLIAM J. WHEELER, OF FORT WAYNE, INDIANA.

CAR-ROOF.

No. 849,518.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM J. WHEELER, a citizen of the United States, residing at Fort Wayne, in the county of Allen, in the State of Indiana, have invented certain new and useful Improvements in Car-Roofs; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in car-roofs specially designed and adapted for use in freight-cars.

It is well known that wooden roofs for freight-cars are objectionable because they warp and check and are subject to destructive expansion and contraction by constant exposure to the weather and that metal roofs which are made by sheet-metal sections with overlapping and flattened edges are objectionable because they are expensive to make, difficult to repair, and the seams thus flattened are soon broken and destroyed by the expansion and contraction incidental to use.

The primary object, therefore, of my invention is to provide a comparatively cheap and durable car-roof formed of a plurality of non-corrosive sheet-metal sections having a novel form of longitudinal interlocking flanges on their opposite edges and upon their inner ends to permit a free expansion and contraction thereof without injury or derangement and a novel means for detachably securing the outer ends of the said sections to the car-body, whereby the interlocking roofing-sections can readily be placed in position, and any one of the sections can easily and readily be removed for repairs without disturbing or destroying the next adjacent or other roofing-sections.

My invention consists of a series of interlocking sheet-metal sections of novel form and arrangement adapted to permit a free expansion and contraction thereof and a plurality of detachable brackets in which are loosely mounted rods by which the roofing-sections are firmly secured in position.

The principal novel features of my present invention resides in the construction for securing the roofing-sections in their interlocked but detachable union and in the means for securing them to the car-body.

Similar reference-numerals indicate like parts in the several views of the drawings, in which—

Figure 1 is a fragmentary perspective view of a freight-car having my invention in position thereon, the same being broken away in part to show certain details of construction. Fig. 2 is side view of a portion of the roof with the running-board and two of the saddle-blocks removed and showing the manner of inserting or removing one of the interlocking sections. Fig. 3 is a cross-section of the upper portion of a car having my improved roof thereon, taken on the line *x x*, Fig. 1, to show the construction of the interlocking inner ends of the sections. Fig. 4 is an enlarged detail end view of two adjacent flanges in their interlocked position, showing the relative arrangement thereof to admit of the usual expansion and contraction. Fig. 5 is a perspective view of the auxiliary plate which closes the space between the sections at their front edges, the same being shown in connection with a portion of the cooperating rod and bracket. Fig. 6 is a bottom plan of this plate, showing the transverse slot in the flange.

The car-body 1 of the usual or other proper form and of any desired dimensions has the usual or any proper roof-sheeting 2, supported at their ends by the sides 3 of the car and at their inner ends by a ridge-plate 4 or other proper manner. On this sheeting 2 a plurality of sheet-metal roofing-sections 5, preferably of galvanized iron or other non-corrosive material, are secured by an interlocking union which admits of proper expansion and contraction as follows: Each roofing-section 5 has its inner end provided with an inverted-V-shaped flange 6, Fig. 3, adapted to form an interlocked engagement with the corresponding flange 6 on the adjacent roofing-section on the opposite side of the roof. Its lower end is bent into a downward and inturned flange 11, Fig. 3, adapted to receive longitudinally the horizontal rods 12. Each section 5 is also provided upon its sides with longitudinal flanges adapted for an interlocking union with the adjacent longitudinal flange of the companion sections upon each side thereof. These interlocking flanges are of approximately equal length with the sections and are formed by coiling one edge of the roofing-section upwardly and away from the body of the section into a receiving-coil 7, whose free edge is bent into substantially dia-

metric relation to the coil, as shown at 8 in Fig. 4. The other and opposite edge of the section is coiled upwardly and toward the body thereof, forming a somewhat smaller coil 9, whose free edge is also preferably bent into a position approximately diametric to the coil 7, as shown at 10, Fig. 4. By this construction each roofing-section has a coil 7, adapted to receive longitudinally and form an interlocking union with the smaller coil 9 of its next adjacent section upon one side thereof, and a coil 9 of sufficiently less diameter to loosely fit within the coil 7 of the adjacent roofing-section upon the other side thereof, as shown in Figs. 2 and 4, whereby these interlocking coiled flanges 7 and 9 can readily be disengaged or replaced longitudinally, and they are so securely interlocked that they cannot be separated laterally without destroying the flanges.

The flanges 11 of the respective sections are slightly separated from each other, as shown in Fig. 2, to admit the upper laterally apertured end of the brackets 13, adapted to receive the rods 12, as shown, and have their lower ends rigidly secured to the side 3 of the car in any proper manner. The rods 12 have their outer ends downward bent and formed into an eye 14, which is loosely secured in the apertured upper end of the respective brackets 15, fixed in the proper relation upon the car-body. The inner ends of these rods preferably overlap at the center of the middle roofing-section for greater rigidity therein. I preferably close the said spaces between the ends of the flanges 11 in use by means of a series of small plates 16, Figs. 5 and 6, having its forward end provided with a down and inturned flange 17, similar in contour to the flange 11, but of less diameter, and is adapted to fit snugly within the same and is adapted to receive the rod 12. This flange 17 has a transverse slot 18 midway of its ends to receive the upper end of the brackets 13, as shown in Fig. 5. The employment of these auxiliary plates 16 makes the roof entirely waterproof.

The end roof-sections 19, Figs. 1 and 2, have their outer flange turned downward and inward to form the respective edges of the roof, as shown at 20, which perfectly excludes all moisture at that point of the roof.

The usual or any proper saddle-blocks 21, having a central transverse recess upon their lower face for the respective interlocked flanges 6 and a longitudinal recess 23 for the inner adjacent ends of the flanges 7. The blocks are firmly secured in position upon the roof in any proper manner. Any proper running-board 22 is fixed upon these blocks in any suitable manner.

When it is desired to repair or replace any of the roofing-sections, the operator simply

removes the running-board and the necessary saddle-blocks, detaches the proper one of the brackets 15, then withdraws the corresponding rod 12 from within the coils 11, and detaches the proper brackets 13, after which he can readily disengage the interlocked flanges 6 of such sections and then withdraw them longitudinally downward, as shown in Fig. 2. In the same manner any or all of the roofing-sections can readily and conveniently be replaced when desired. It is obvious that when these roofing-sections are interlocked at their upper and inner ends by the flanges 6 and at their sides by the longitudinal flanges 7 and 9 and firmly secured in such position by the saddle-blocks 21 and the rods 12 all parts of the roof will be rigidly secured in position, and yet will admit of considerable expansion and contraction by means of its interlocking flanges without injury or derangement to the roof or any portion thereof.

Having thus described my invention and the manner of employing the same, what I desire to secure by Letters Patent is—

1. A car-roof formed of a plurality of metallic roofing-sections having their inner ends provided with locking-flanges, and having longitudinal locking-flanges on their opposite edges, consisting of loosely-interlocking coils adapted to be separated longitudinally without shifting their planes of location, the said interlocking sections being provided upon their outer ends with an inwardly-coiled flange; and means for securing the lower end of the said sections in position, comprising a pair of horizontal rods arranged in the said named flanges, and a plurality of brackets supporting the said rods as described.

2. In a car-roof a series of metallic roofing-sections having locking upturned flanges upon their upper ends, and down and inturned flanges upon their lower ends, and having longitudinal coiled interlocking flanges upon their opposite edges, whereby the said sections are adapted for a free expansion and contraction without injury thereof; means for securing the upper end in their locked relation; and means for securing the lower end of the said sections to the car-body, consisting of a plurality of upright brackets fixed on the adjacent side of the car-body, and a pair of meeting rods loosely mounted in the said inturned flanges and supported by the said brackets.

Signed by me at Fort Wayne, Allen county, State of Indiana, this 24th day of October, A. D. 1906.

WILLIAM J. WHEELER.

Witnesses:

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AUGUSTA VIBERG.