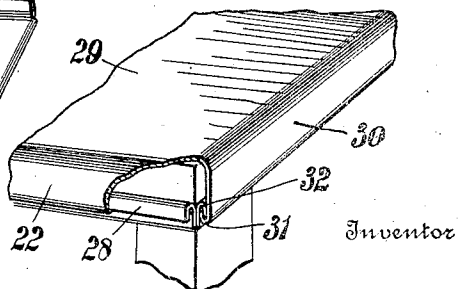
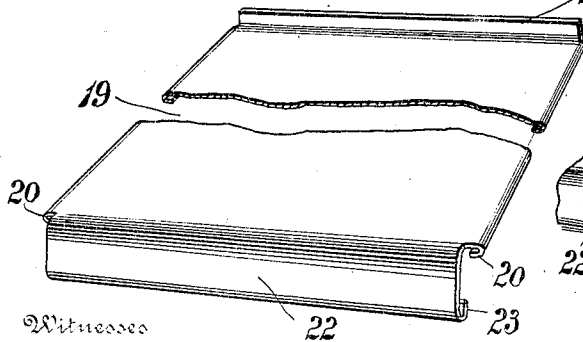
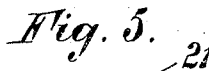
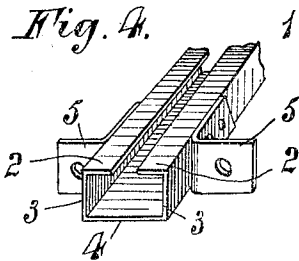
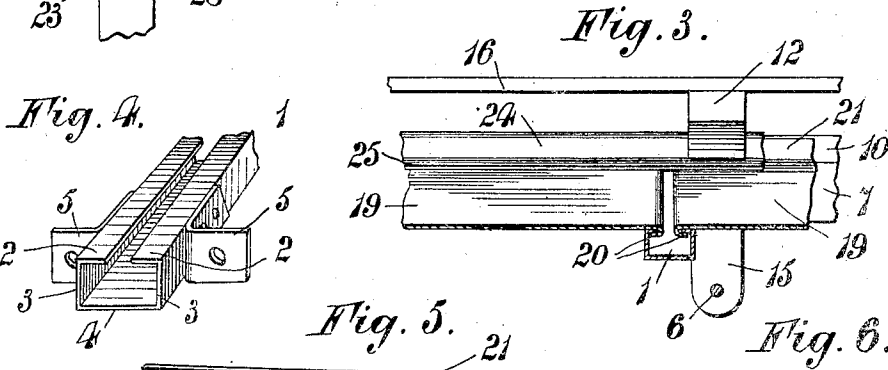
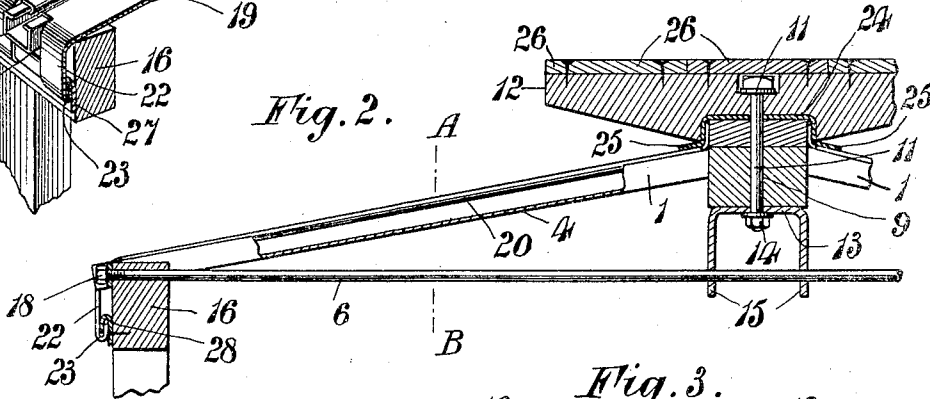
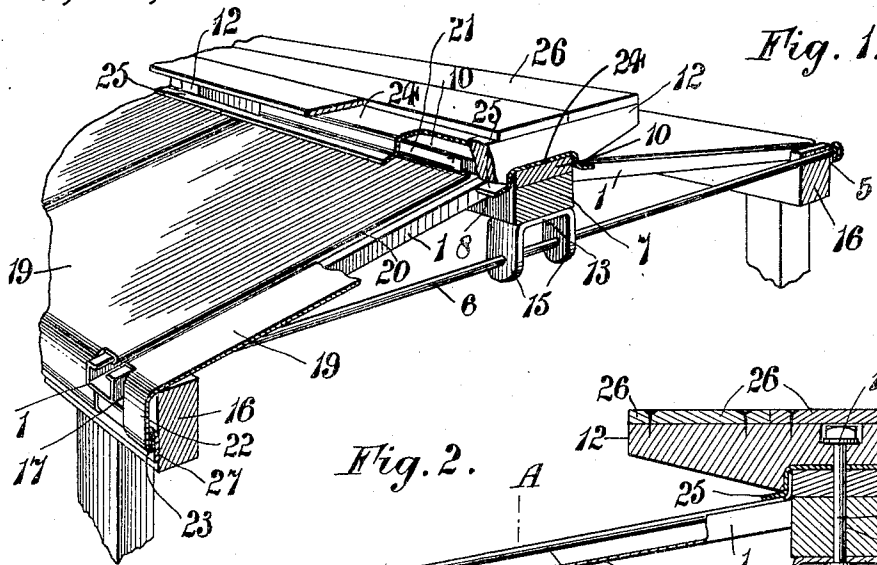


A. COPONY.
CAR CONSTRUCTION.
APPLICATION FILED DEC. 11, 1911.

1,056,975.

Patented Mar. 25, 1913.



Witnesses

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CAR CONSTRUCTION.

1,056,975.

Specification of Letters Patent.

Patented Mar. 25, 1913.

Application filed December 11, 1911. Serial No. 665,146.

To all whom it may concern:

Be it known that I, ALFRED COPONY, resident of 151 Ash avenue, in the city and district of Montreal, in the Province of Quebec, in the Dominion of Canada, a subject of the Emperor of Austria-Hungary, have invented certain new and useful Improvements in Car Construction; and I do hereby declare that the following is a full, clear, and exact description of the same.

The invention relates to improvements in car construction, as described in the present specification and illustrated in the accompanying drawings that form part of the same.

The invention consists essentially in the novel construction and arrangement of the parts, comprising the roof portion of the car, whereby the plates forming the roof are connected by a joint member, the latter forming the major part in each instance of the supporting trusses.

The objects of the invention are to lessen the cost of production in steel cars, to devise a roof absolutely free from leakages, to lighten the construction, and generally to provide a cheap and durable structure.

In the drawings, Figure 1 is a cross sectional perspective view of the car roof. Fig. 2 is an enlarged cross sectional view, partly broken away. Fig. 3 is an enlarged longitudinal sectional view, broken away, on the line A—B in Fig. 2. Fig. 4 is an enlarged perspective detail of the outer end of a carline. Fig. 5 is a perspective detail of a roof plate, broken away in the center. Fig. 6 is a perspective detail of the end corner of the car, showing the locking flange joint.

Like numerals of reference indicate corresponding parts in each figure.

Referring to the drawings, 1 is a carline in trough form, having the inwardly turned flanges 2 on top extending from the side walls 3 and formed at the bottom in the channel bed 4, said carline extending in an oblique upward direction and downwardly on the other side of the longitudinal center of the car in one length.

5 are angle brackets, rigidly secured to the side walls 3 adjacent to the lower ends of the carline 1.

6 is a tie rod, rigidly secured to one of each pair of said brackets 5 and therefore extending across from one end portion of the carline to the other end portion of the carline thereunder and forming with said

carline a supporting truss for the roof, there being several of such supporting trusses, each carline forming also a trough in which the rain water flows down and empties beyond the side walls of the car, thus said carlines are very perfect joint pieces, as the water which otherwise might enter the joint, is carried away.

7 is the ridge pole, having the cross slots 8 through which the said carlines 1 extend, and the bolt holes 9 centrally through said ridge pole 7, near the said cross slots 8.

10 is a super ridge pole covering in the carlines 1 and having corresponding bolt holes therethrough to the bolt holes 9.

11 are bolts extending through the running board saddles 12 the super ridge pole 10, beside the carlines 1 and through the ridge pole 7 having their heads countersunk in the upper sides of said running board saddles 12 and at the lower end thereof securing the brackets 13 to the underside of the ridge pole 7 by means of the nuts 14, said brackets 13 having downwardly extending arms 15 through which the tie rods 6 extend.

16 are the side beams of the frame, recessed at 17 to receive the trusses formed of the carlines 1 and tie rods 6, said trusses being rigidly secured to said side beams 16 by the nuts 18, thus completing the frame of the roof, the walls and under part of the body of the car being constructed in any suitable way.

19 are the roof plates, formed at the sides thereof with the inwardly curled flanges 20, the upwardly bent flange 21 at the top thereof and at the lower end the downwardly bent flange 22, said flange 21 being again flanged by the inward and upward curl 23 at the lower end, said plates 19 being of sufficient width to occupy the space between the carlines 1 and slightly overlap the side edges of said carlines in order that the inwardly curled edges 20 may be run under the inturned flanges 2 and thus make the said carlines 1, the joint pieces between the roof plates, the flanges 22 forming the overhangs at the edges of the roof, while the upturned flanges 21 rest against the ridge pole sides.

24 is the crown plate extending along the length of the car, over the ridge poles 10 and 7 and under said running board saddles 12, said bolts 11, also extending through said crown plate, the latter having the angle

flanges 25 at each side thereof extending over the upper portion of the roof plates 19.

26 are the running boards secured on the saddles 12.

5 27 is a longitudinal locking plate, either extending the whole length of the car or made in sections and having the outwardly and downwardly curled flanged upper edge 28 engaging the curled edges 23 of the roof plates 19, thus relieving the strain on the crown plate 24, without in any way adding to the rigidity of the construction, that is to say, said locking plate 27 permits the roof the necessary play for the strains that it is
10 subject to.

15 In Fig. 6, one of the end plates 29 is shown, in which the plate has a side flange 30, extending downwardly and curled at 31 at the under side, said curl being locked by the plate 32 arranged similarly to the locking plate 27 only on the end walls of the car, said plates 27 and 32 being rigidly secured to the side and end walls of the car.

20 It will now be seen that the roof portion of the car is complete and as this application is confined to the construction of the roof, the other parts to the car shall not be set forth.

25 The roof plates, as explained, occupy the spaces between the troughed truss members, the carlines of said truss members forming the joint pieces, said joint pieces proving in themselves free runways for the water, and it will be readily seen that it would be quite
30 impossible for the water to back up around the curled edges instead of flowing downwardly and out of the troughs. There is only one fastening which in each case penetrates the roof, viz.—the bolts 11 and the
35 heads of these are completely closed in by

the center running board, so that it would seem impossible for any water to get into the interior that way, otherwise there is no fastening at all in the way of a break through the metal, and of course, this roof is all metal, with the possible exception of the running boards.

45 The brackets 13 may be held by the single bolts, because the tie rods 6 prevent them from turning, said tie rods can be secured in any suitable way to the brackets 5, either to one of a pair or to two of a pair, as the case may be, for the end of said tie rods can be flanged to suit the fastening or a separate flange to screw into said tie rods may be arranged. Such details are not important to this specification as it is the essential features only which are emphasized.

What I claim is:

50 In car construction, a car roof formed of a plurality of metal plates extending from the ridge pole over the side beams and having inwardly curled side flanges, a ridge pole, a crown plate engaging the upper ends of said metal plates and a plurality of car lines of truss formation having their tie rods lending support to said ridge poles and their rafters centrally supported by said ridge pole, said rafters being a tube like formation and having a longitudinal slot in the upper side from end to end said metal plates being loosely hooked on said rafters at the edges of said slot.

Signed at the city and district of Montreal, Quebec, Canada, this 9th day of December, 1911.

ALFRED COPONY.

Witnesses:

H. R. TAYLOR,

G. H. TRESIDDER.