(No Model.)

P. H. MURPHY.

FLANGED METAL PLATED AND SHEETED DOUBLE CAR ROOF.

No. 499,641. Patented June 13, 1893.

Fig. I.

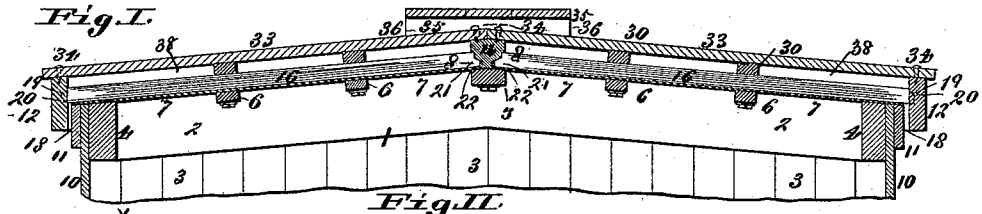


Fig. II.

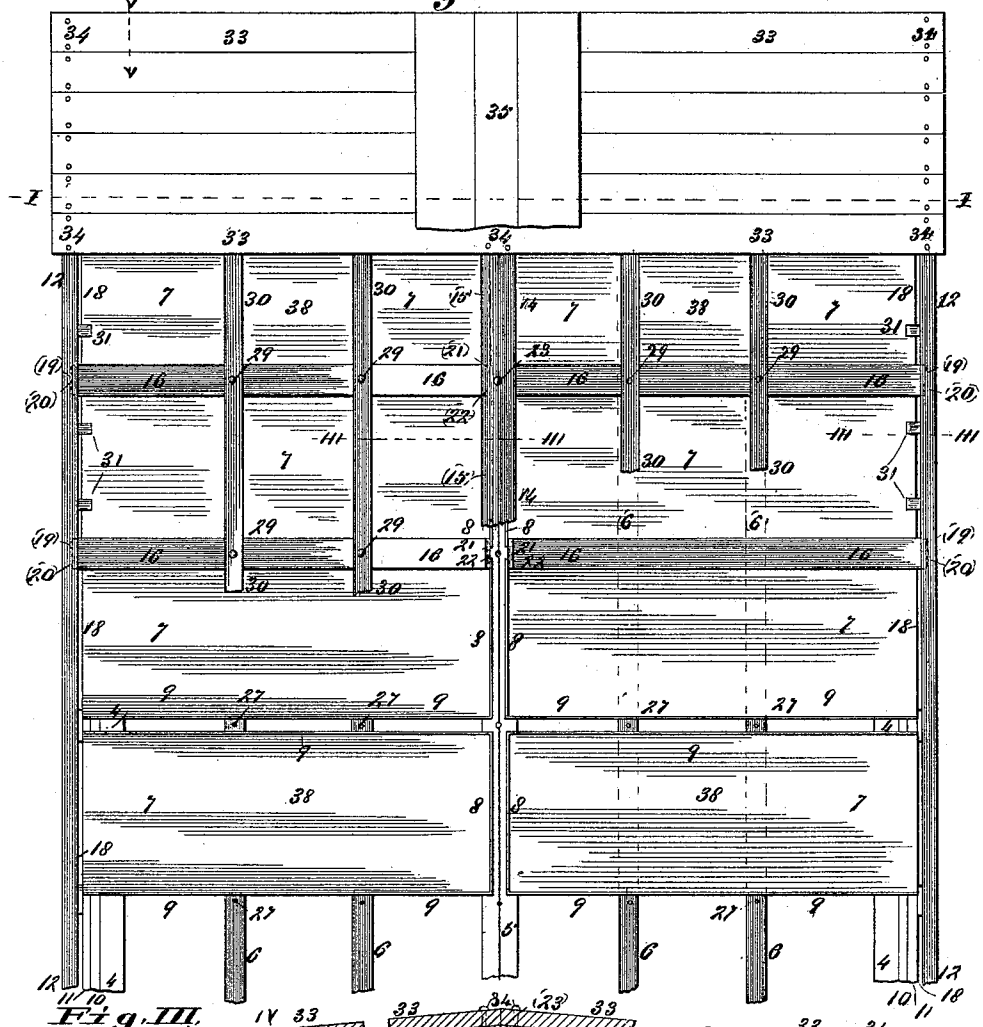


Fig. III.

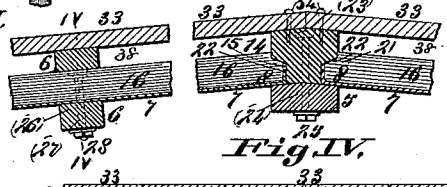


Fig. V.

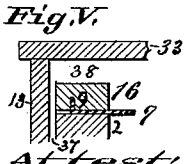
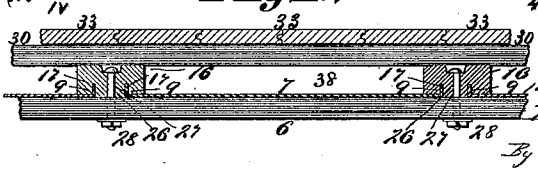


Fig. IV.



Attest:
Benj. A. Knight.
Albert W. Ebersole

Inventor:
Peter H. Murphy.
By Knight Bros
atty's

UNITED STATES PATENT OFFICE.

PETER H. MURPHY, OF EAST ST. LOUIS, ILLINOIS.

FLANGED METAL PLATED AND SHEETED DOUBLE CAR-ROOF.

SPECIFICATION forming part of Letters Patent No. 499,641, dated June 13, 1893.

Application filed January 6, 1893. Serial No. 457,557. (No model.)

To all whom it may concern:

Be it known that I, PETER H. MURPHY, of East St. Louis, in the county of St. Clair and State of Illinois, have invented a certain new and useful Improvement in Flanged Metal Plated and Sheeted Double Car-Roofs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a double car-roof, in the lower section of which are flanged, metal section plates that rest on the eaves-plates, the ridge pole and the intervening purlins and the upturned peak flanges of which metal plates are seated in boxings and slots in the under side of the surmounting super-ridge pole, and up-turned side flanges of said plates, are seated in narrow slots in the under sides of the surmounting super-carling ribs; the said metal section plates with their flange inserted edges constituting both a perfect water shed, and a firm brace to the roof structure; the said plates being secured without any nail hole or other perforation that frequently start leaks and the ridge poles and eaves plates being connected together by mortise jointed carlings, and the roof stiffened and its metal and super-sheeting supported by purlins and super-purlines; and the invention consists in features of novelty hereinafter fully described and pointed out in the claims.

Figure I is a detail, vertical section, taken on line I—I, Fig. II, and shows the section metal plates resting on the eaves-plates, ridge poles, and purlins, the upper flanges of said plates seated in the inner recesses of the box mortises of the carlings in said ridge poles. It also shows the super-carlings, sheeting and ridge walk. Fig. II is a detail, top view of the car roof, and shows the eaves-plates, ridge poles, purlins, carlings, section metal plates, super-carlings, sheeting and ridge-walk, the upper flange of said section metal plates seated in longitudinal slots in the under side of the super-ridge pole. Fig. III is an enlarged detail, vertical, intermittent section, taken on lines III—III, Fig. II, and shows the eaves-plate, ridge pole and purlin, the section metal plates resting thereon, the super-ridge-pole, the carlings with their box-mortise seats, the super-purlin, and the sheeting. Fig. IV is an enlarged detail, vertical section, taken on line IV—IV, Fig. III, and shows the purlin, the sectional flanged metal plates seated thereon, the carlings that surmount said metal plates, the said carlings provided with longitudinal slots in which said flanges of the metal plates are seated, the super-purlins and the sheeting; and Fig. V is an enlarged detail, vertical section, taken on line V—V, Fig. II, and shows the gable provided with perforations through which air enters to ventilate between the metal plates and the surmounting sheeting.

Referring to the drawings:—1 represents the gable end of the car, with its peak frame 2, and inclosing boards 3.

4 represents the eaves plates, 5, the ridge pole, 6 the purlins, and 7 the sectional metal plates which rest on said eaves-plates, ridge poles and purlins. The said metal plates have up-turned head-flanges 8 at their upper ends, and upturned side flanges 9 at each side.

10 represents the siding boards, 11 the finishing eaves-boards at the upper ends of said siding boards; 12 the offset eaves purlin, and 13 the crown gable finish.

14 represents the super-ridge-pole, which is provided with two longitudinal, narrow, parallel slots 15 in its under side, in which slots the upturned head flanges 8 of the sectional metal plates are inserted, when said super-ridge-pole is placed in position along the ridge of the roof, as shown in Figs. I, II and III.

16 represents the carlings, which are also provided with two longitudinal, narrow, parallel slots 17 in their under sides, like unto the slots in the super-ridge-pole. In these parallel slots the upturned side flanges 9 of the sectional metal plates 7 are inserted, and thus in conjunction with the head-flanges 8 of said plates which are inserted in the super-ridge poles, the car roof is very firmly braced, while at the same time by means of said side and head flanges, all moisture that passes through the wooden super-sheeting or drifts beneath it, is diverted from leakage and precipitated over the eaves, through the open vents 18 that are provided between the offset eaves purlins 12 and the eaves-boards 11. The offset of said eaves purlins are secured by their attachment to the projecting ends of the carlings 16 by means of the box-tenons 19 that are seated in the box mortises 20, in

the said eaves-purlins. The box-tenons 21 at the head of said carlings are seated and secured in the box mortises 22 in the super-ridge pole 14 that intervenes between and surmounts said carlings.

23 represents the ridge screw bolts, which are seated in bolt holes 24, in the super-ridge-pole and ridge-pole, and are secured by screw nuts 25, to firmly clamp said ridge poles together.

26 are screw bolts that are seated in holes 27 in the carlings and purlins, and are secured by the screw nuts 28, and 29 are screw bolts that in like manner secure the super-purlins 30 to the carlings on which they are seated. The said bolts in each case passing through the diametric centers of the purlins, avoid interference with the sectional metal plates.

31 represents angle clips that are secured to the outside of the eaves-boards by the nails 32, and their angle tops embrace the lower edges of the sectional metal plates, to hold them firmly to their positions at the eaves.

33 represents the tongue matched wooden super-sheeting, which rests on the super-ridge-pole 14, on the eaves purlin 12, and on the intermediate super-purlins 30, and which is secured to the super-ridge pole and to the eaves purlins by nails 34.

35 represents the foot-board or platform, which is secured on its sill beds 36 along the ridge of the roof, to provide a walk for the signal and brakemen along the roof of the cars from end to end of the train. The crown gable finish 13 is offset from the gable, making vents 37, that allow free passage and intercourse for the air between the sectional metal plates and the wooden sheeting of the roof, and thus in conjunction with the open space 38 between said roofs, and the open vents 18 within the projected eaves purlin, especially while the train is in motion, a constant ventilation is maintained between said roofs that prevent all the evil consequences incident to dampness in said parts and their consequent rapid decay.

The advantages of this new car-roof have been in a measure pointed out while the various constructive parts have been brought to view, but I will further add, that by the use of my sectional metal plates 7, with their head and side flanges 8 and 9, the said flanges inserted in longitudinal slots in the super-ridge-pole and carlings that surmount said plates, the following fourfold great advantages are realized:

First. A remarkable brace combination is established between the said sectional plates and said roof-timbers, that makes an unusually stiff car-roof that is a great aid, even in otherwise disastrous collisions, to help to preserve the car and its contents from breaking up. It is also a great aid to prevent, in a large measure, the rackage of both cars and their freight when passing over rough tracks. In short, the effective brace system thus provided for the roof constitutes, so to speak, a back-bone to the whole car, that both largely adds to its durability and to the safety of the freight or contents carried therein.

Second. As the head and side flanges of the metal plates rise up and are embedded in the roof timbers above, and both said timbers and plates are secured as described, without the intervention of a nail, or bolt through said metal plate, they are consequently perfectly water proof.

Third. Said embedment of said flanges of said metal plates secures an air tight roof and consequently in a large measure, a frost tight roof, which is of great advantage in the shipment of perishable freight.

Fourth. The system of ventilation between the two roofs preserves its materials in a large measure from dampness, rust and decay, and also in the heat of summer, ameliorates the effects on perishable freight, of the sun's rays on the roof.

I claim as my invention—

1. In a double car-roof, the combination of the eaves plates 4, the purlins 6, the ridge-pole 5, the sectional, metal plates 7, that rest on said parts, the said plates having the upturned head flanges 8, and upturned side flanges 9, the super-ridge-pole 14, provided with the parallel, longitudinal slots 15 in which said head flanges are inserted, and the carlings 16 provided with the parallel, longitudinal slots 17 in which said side flanges are inserted; substantially as described.

2. In a double car-roof, the combination of the eaves plates, the purlins 6, the ridge-pole 5, the sectional metal plates 7, the said plates having the upturned head flanges 8, and side flanges 9, the super-ridge-pole 14 provided with the longitudinal, parallel slots 15, in which said head flanges are inserted, the carlings 16 provided with longitudinal, parallel slots 17, in which said side flanges are inserted, the offset eaves-purlins 12, having box tenoned mortise-joints to the projecting carlings 16, to provide open vents 18 for the eaves-drop and the circulation of air, the heads of said carlings having box tenoned mortise-joints to said super-ridge pole, the crown gable 13 provided with the ventilator holes 37, the angle clips 31, that embrace the feet of said sectional metal plates, the super-purlins 30, the bolted connection of said roof timbers and the upper sheeting 33; substantially as described.

PETER H. MURPHY.

In presence of—
BENJN. A. KNIGHT,
E. S. KNIGHT.