(No Model.)

W. A. MURTFELDT.

ROOF FOR RAILWAY CARS.

No. 284,141. Patented Aug. 28, 1883.

Fig. 1.

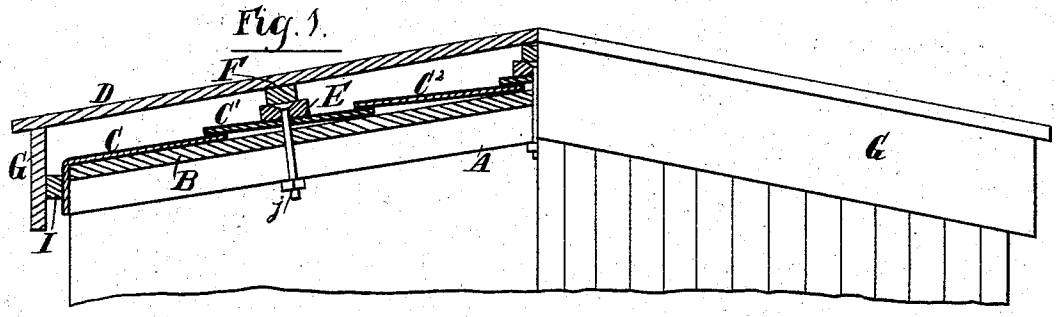
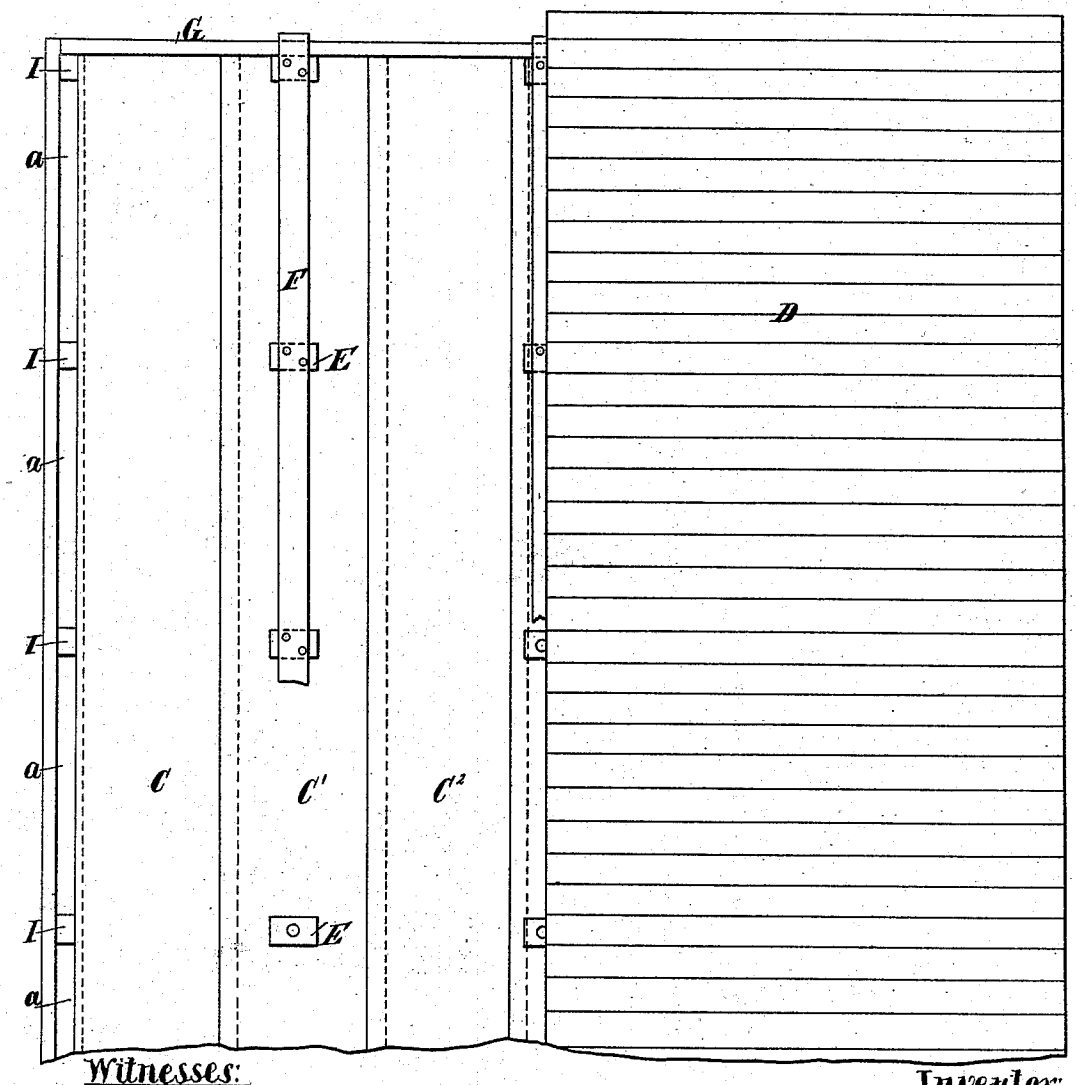


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILL A. MURTFELDT, OF CINCINNATI, OHIO.

ROOF FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 284,141, dated August 28, 1883.

Application filed February 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILL A. MURTFELDT, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Roofs for Railway-Cars, of which the following is a full, clear, and exact description.

My invention relates to certain improvements in roofs for railway-cars of the kind generally known as "double roofs," the object being to provide an open air-chamber between the inner and outer roofs, adapted to permit the constant circulation of currents of air between them, and to provide a series of outlets for any water which may come in contact with the inner roof; also, affording greater protection from leakage of the inner roof, reducing the cost of construction, and producing a lighter roof as compared with sheet-iron roofs and other composition roofs now in use.

To this end my invention consists of a double car-roof, comprising an inner roof, the covering of which is composed of prepared roofing felt or paper, of suitable thickness, laid on the sheathing-boards in strips lengthwise of the car, said strips overlapping each other and being cut of a length sufficient to permit their ends to extend downwardly over the ends of the roof, between the ends of the roof and the verge-boards, and the eaves-strips overlapping the sides of the roof, so as to extend downwardly between the sides of the roof and the verge-boards; also, in the arrangement of a series of blocks set on the covering-strips and suitably secured to the rafters to support stringers, to which the roofing-boards forming the upper roof are nailed, whereby an air-chamber is formed between the inner and outer roofs; and in the arrangement of a series of blocks secured in place between the turned-down portions of the covering material at the sides of the roof and the verge-boards, whereby a series of open spaces are formed, adapted to permit the circulation of currents of air through the air-chamber and providing outlets for water, all as hereinafter fully set forth.

In the drawings, Figure 1 is an end view and part section of a roof embodying my improvements, and Fig. 2 is a plan view of part of the roof with the roofing-boards of the upper roof removed from one side.

Similar letters of reference designate corresponding parts in both the figures.

The letter A designates the rafters of the inner roof, and B the sheathing boards thereof.

C C′ C^2 designate strips of roofing-felt, preferably of the kind known as "prepared" or "ready made" roofing-felt, which is composed of two or more layers of saturated felt or paper cemented together with pitch, asphaltum, or other suitable water-proof compounds. The strips C C′ C^2 are laid upon the sheathing-boards B lengthwise of the car, overlapping each other in the direction of the width of the car, and are cemented together at the laps with pitch, asphaltum, or other suitable compounds, so as to form a continuous water-tight covering to the sheathing-boards B. The ends of each strip C C′ C^2 are turned down over the ends of the roof, and the strips C extend down over the sides of the roof for a distance of about two inches. The entire felt-surface may then be coated or painted with any suitable composition.

E designates blocks of wood arranged on top of the felt-surface in parallel rows at suitable distances apart, which are secured to the rafters A by bolts and nuts *j*, or screws, to insure a tight joint around the bolt-holes. The blocks E are set in hot pitch or asphaltum on top of the felt-surface. On these blocks E stringers F are placed and fastened, and roofing-boards D, to form the outer roof, are nailed to the stringers F, thus supporting the outer roof above the inner roof and forming an air-chamber between them.

G designates the verge-boards, which are of the ordinary construction. At the ends of the roof the verge-boards G are nailed against the ends of the strips C C′ C^2, which are turned down over the ends of the roof, and the ends of the stringers F are supported by being notched into or otherwise fastened to the end verge-boards. At the sides of the car the verge-boards G are held away from contact with the turned-down edges of the strips C by interposed blocks I, arranged at suitable distances apart and properly secured in place, thus forming a series of openings, *a*, as clearly

shown in Fig. 2, which serve the double purpose of permitting the free circulation of air through the air-chamber between the inner and outer roofs, and forming outlets for water between the side verge-boards and the sides of the car.

I prefer to use for the covering material prepared or ready-made roofing-felt of the kind described in Letters Patent No. 259,228, granted to O. A. Smith and F. L. Kane, June 6, 1882, although any other suitable roofing-felt may be employed; or thin strips of tin, laid in the manner described, might be used instead when desired.

I am aware that it is not new to form a double roof for cars with an air-chamber between the inner and outer roofs; neither is it new to cover the inner roof with roofing-felt or other suitable covering material; but such structures differ from my improvement in that no provision is made for the admission of air to the air-chamber and the exit of water from the inner roof, and, moreover, they are less simple in construction and more costly.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A double car-roof, consisting of an inner roof protected against leakage by suitable covering material, and an outer roof supported on stringers secured to interposed blocks and end verge-boards, whereby an air-chamber is formed between the inner and outer roofs, in combination with blocks interposed between the sides of the inner roof and the side verge-boards, whereby a series of openings are provided for the admission of currents of air to the air-chamber and the exit of water from the inner roof, substantially as herein shown and described.

2. A double car-roof, consisting of an inner roof covered with roofing-felt laid in strips lengthwise of the car, said strips overlapping each other, and having turned-down portions covering the sides and ends of the roof, and an outer roof supported on stringers secured to blocks and end verge-boards, said blocks being set on the covering-strips in parallel rows in line with and fastened to the rafters, whereby the outer roof is supported above the inner roof to form an air-chamber, in combination with blocks interposed between the turned-down portions of the covering-strips and the side verge-boards, whereby a series of openings are provided for the admission of currents of air to the air-chamber and the exit of water from the inner roof, substantially as herein shown and described.

3. The combination of the inner roof, A B, having a protecting-covering, composed of two or more layers of roofing felt or paper cemented together and laid in strips lengthwise of the car, said strips overlapping each other in the direction of the width of the car without intervening material between the laps, with the blocks E I, stringers F, verge-boards G, and roofing-boards D, substantially as herein shown and described.

4. The combination and arrangement of rafters A, sheathing-boards B, and covering-strips C C′ C^2, with the blocks E, stringers F, and roofing-boards D, and with the blocks I, and verge-boards G, to form a double car-roof, substantially in the manner and as herein shown and described, for the purposes set forth.

In testimony whereof I have hereunto set my hand this 5th day February, A. D. 1883.

WILL A. MURTFELDT.

Witnesses:
ARTHUR C. WEBB,
ERNEST C. WEBB.