(No Model.)

S. W. HEMPSTED.

COVERING FOR FREIGHT CAR ROOFS.

No. 556,973. Patented Mar. 24, 1896

Fig. 1.

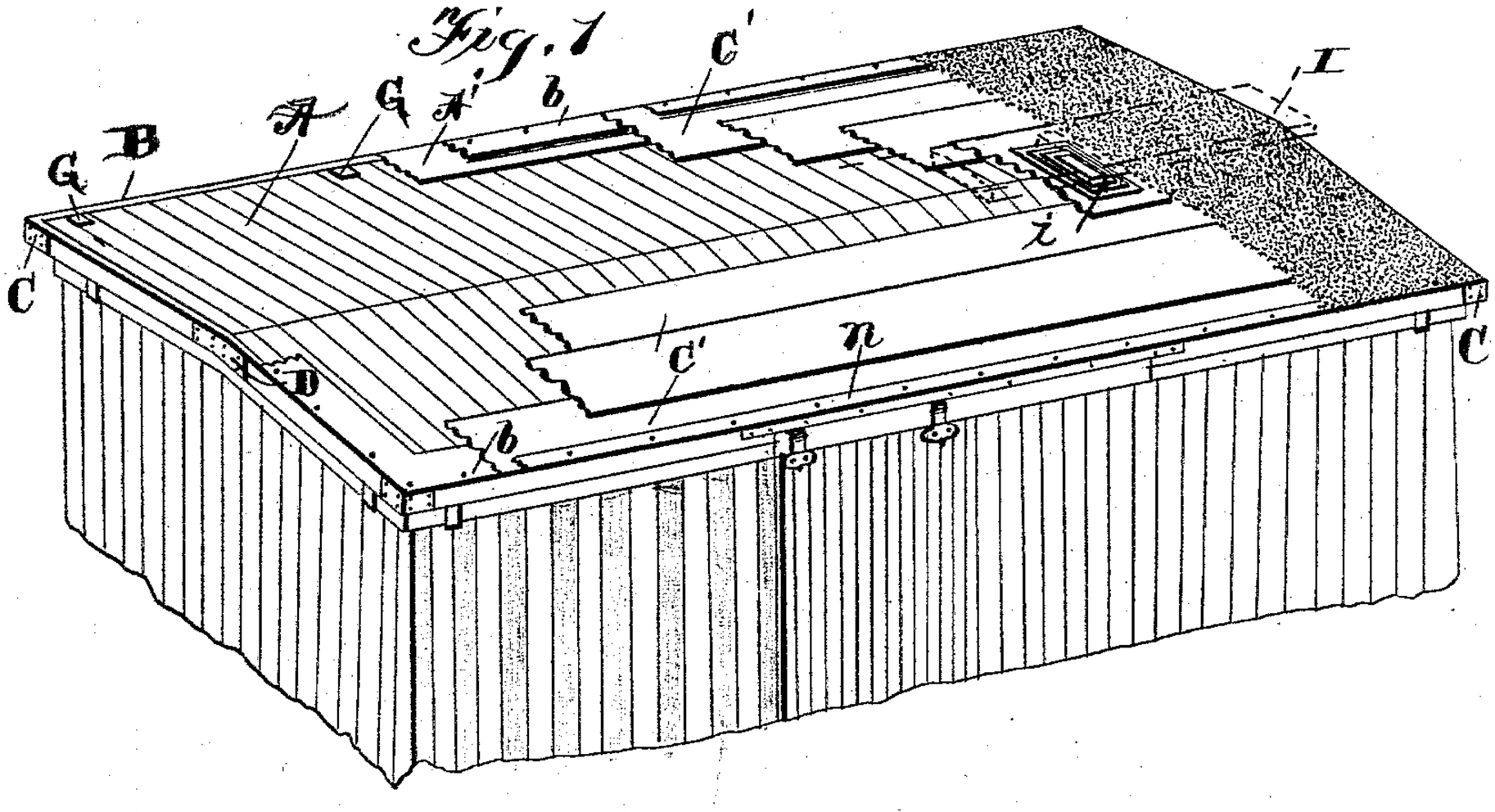
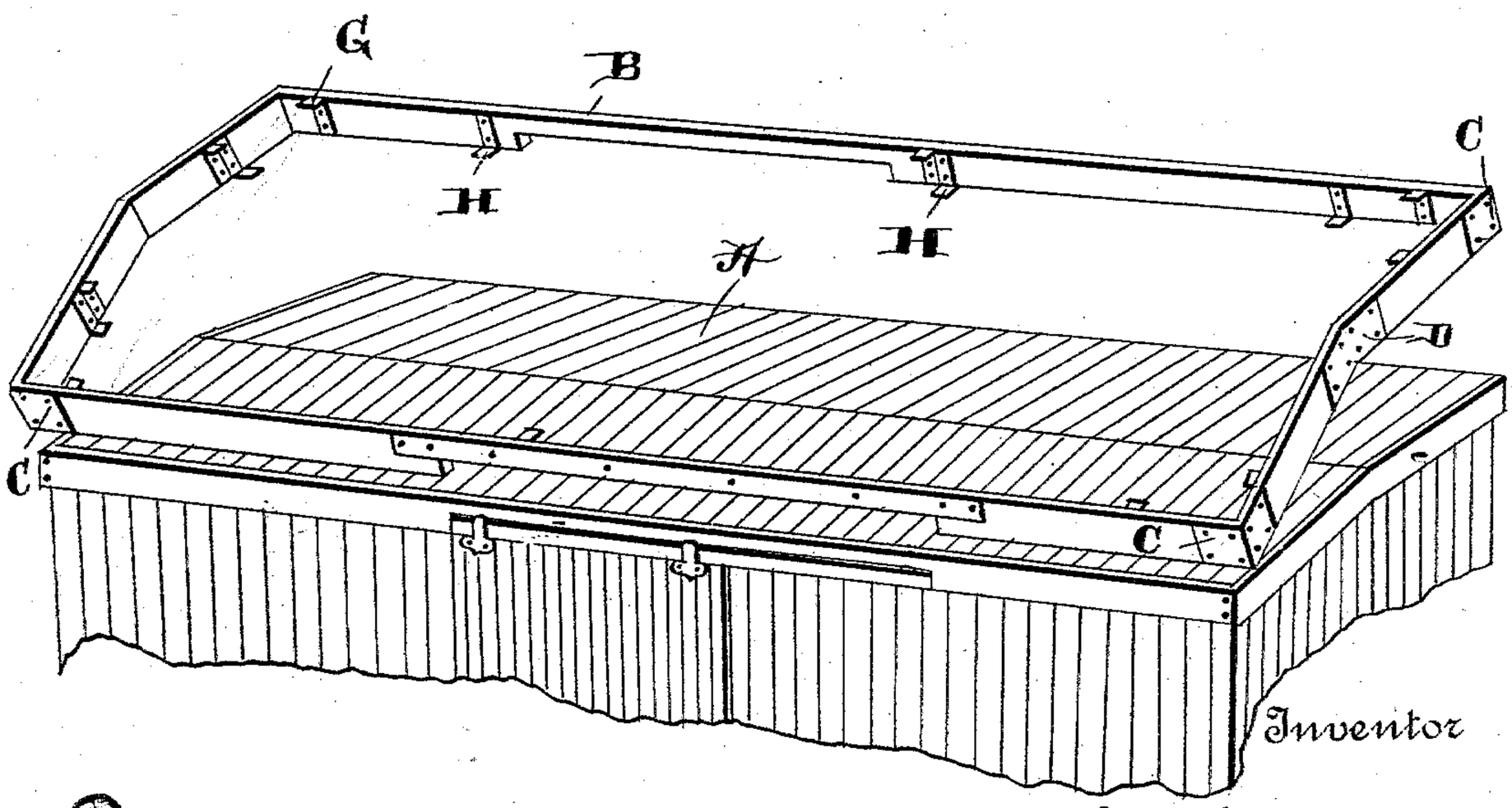


Fig. 2.



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COVERING FOR FREIGHT-CAR ROOFS.

SPECIFICATION forming part of Letters Patent No. 556,973, dated March 24, 1896.

Application filed October 28, 1895. Serial No. 567,142. (No specimens.)

To all whom it may concern:

Be it known that I, SAMUEL W. HEMPSTED, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Coverings for Freight-Car Roofs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in coverings for freight-car roofs, pertaining to a roof of felting or combined felt and concrete and a supporting-frame for the same, all of which will be more fully set forth and described hereinafter, and particularly pointed out in the claims.

The object of my invention is to provide a felt or combined felt and concrete roof for freight-cars, consisting of a frame, (supported at and by the eaves of the car-roof,) to which the felt is secured, and to use strengthening or combining strips or sheets of metal resting upon and around the eaves of the car and upper edge of said frame, to which also the felt is connected, and then a final binding-strap of iron upon the upper edge of the frame, which further serves to strengthen the frame, hold the under felts and metal strip, and at the same time provide a dam to hold the subsequent coats of tar or asphaltum and concrete, preventing it from sloughing or running over the sides of the car-roof.

A further object of my invention is to provide a felt or combined felt and concrete roof for freight-cars embodying a frame supported at and by the eaves of the car-roof and felt which is connected to the frame only and resting upon the roof sheathing-boards of car, the aforesaid frame maintaining the same in position and preventing the overlying felt from being torn or warped by the natural and inevitable shrinkage of the lumber composing the sheathing-boards upon which it rests.

In the accompanying drawings, Figure 1 is a perspective view of a top of a car-roof, showing my invention applied thereto, a portion of the roof being completed and a portion uncompleted to show the construction and arrangement of the several parts. Fig. 2 is a perspective view of a car-roof before my invention is applied thereto, the frame being shown above the same and in the act of being placed thereon in position.

A indicates an ordinary board sheathing of a freight-car roof, consisting of common boards tongued and grooved, as shown in Fig. 2, and B is a frame constituting part of my invention, preferably of pine timber, the connecting ends of the side and end pieces being bound by ordinary angle-irons C, and the joined end pieces at front and rear of the car are strengthened at center miters by the plates D. This frame is supported at the eaves and ends of the car by the medium of the upper and lower hooks or anchors G and H, the upper hooks, G, serving to support the frame, and the lower hooks, H, to hold it in line, as will be readily understood.

In constructing my roof proper, after the frame is positioned upon a line with the car-roof sheathing at eaves, a narrow strip of felting A′ is placed along flush with outside of upper edge of frame B, extending over and upon the roof sheathing-boards, as shown, and placed over this strip of felt is a metallic sheet *b*, the felt strip A′ being nailed temporarily to the upper edge of frame B, as shown.

Placed over the metallic strip *b* and the felt strip A′ is the ordinary width of felting C′, with its outer edge also flush with the edge of frame B, and this felt strip is cemented to the metallic strip *b* and felt strip A′ with any desired cement. Placed around the ends of the frame B is the continuation of the metallic strip *b*, the difference being that while at sides of eaves of car the metallic strip *b* is cemented between the under and upper layers of felt first laid at ends of frame it is laid directly next and onto the upper edge of the same, the inner portions resting on the sheathing-boards, the ends of the sheets of felt, as laid thereafter, resting upon said metallic strip *b*, to which they are cemented or nailed, as clearly shown. The succeeding felt strips or layers are then placed one overlapping the other, as shown, cemented together and resting unattached to and upon the roof sheathing-boards of the car until the entire car is covered.

A narrow metallic strip *n* is placed around the entire upper edge of frame B and bolted

or secured by screws through the felt strips C′ and A′ and the metallic strip or sheet *b*, thus further strengthening the frame, more securely binding the felt and strips and frame together, and also serving as a dam to prevent the subsequent coatings of tar or asphaltum and concrete from running over the outer edges of the car-roof when applied thereto, the metallic strip or sheet *b*, cemented between the sheets of felt C′ and A′ and secured to the upper edge of frame B by strap *n* and held in position by bolts or screws, so stiffening the layers of felt at eaves that were hooks G to break or let down the outer layers of the felt at the eaves would by reason of their combination with metallic strip *b* be sufficient and able to maintain frame B in proper position and alignment without destroying the felt connected thereto. A covering of asphalt, cement or tar is placed over the felt strips, thus forming a covering therefor.

It is a recognized fact and fully established that ninety per cent. of the car-roof repairs show the greatest weakness to exist at the ridge or apex of the roof. The point being the only angle in the roof receives most of the strain and breaks oftenest. To provide against this in my construction of roofs I place at intervals along the ridge of the roof what I term "piers" *i*, consisting of a series of layers of felt cemented together and to the roofing-felt. Across these is placed and fastened the ordinary running-board I or walk for the brakeman. This effectually strengthens the roofing at the center and withstands the strain incident to that point.

It will be seen from the above description that I provide a roof which, not being nailed or stuck in any way to the sheathing-boards of the car, will not be endangered by the inevitable shrinkage common to all roof sheathing-boards and will thereby escape the possibility of tearing or rupturing the layers of felt constituting the roofing proper, which takes place when felt is nailed or stuck to sheathing and the sheathing shrinks, as it always will do, and which proves so fatal to felt roofs so constructed, whether on cars or buildings. Furthermore, the construction herein described enables me to produce a cheap and durable roof of felt or combined felt and cement.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A covering for a freight-car roof comprising a frame surrounding the eaves and ends of the car-roof and supported thereby, a series of strips of felt overlapping and cemented to each other, the outer and lower strips and the ends of the strips being attached to the frame only and resting loosely upon the top of the car-roof, and a coating of tar, felt or equivalent material, substantially as described.

2. A covering for freight-car roofs consisting of a frame surrounding and adapted to be supported by the eaves of the car-roof combined felting and metallic strips secured to the upper edges and ends of said frame the felt strips overlapping each other, and a series of felt strips overlapping and cemented to each other, substantially as shown and described.

3. A covering for car-roofs comprising a frame surrounding the eaves thereof, upper and lower hooks engaging the side pieces and end pieces at the eaves of the roof for supporting and holding it in line, a felt strip placed around the top edge of the frame, a metallic strip placed over said felt strip, and means for securing said metallic and felt strips to the frame, and a series of overlapping felt strips cemented together and to the first-named felt strip forming the complete roof, substantially as described.

4. A covering for freight-car roofs consisting of a frame surrounding and supported at the eaves and ends of the car-roof, a felt or similar covering attached to the said frame only, a coating of tar, asphaltum concrete or similar material, and a strip secured around the upper edge of the frame at the side and ends on the top of the felt covering, to strengthen the frame, bind the felt, metallic strip or sheet, and frame securely together, and to form a dam for preventing the applied tar, asphalt or similar material from running over the edges of the car, substantially as described.

5. A covering for freight-car roofs comprising a frame surrounding the roof and supported by the eaves and ends thereof, a felting or similar covering secured to said frame and resting loosely upon the sheathing-boards of car-roof, and piers built upon the said felt at the ridge or apex thereof for the purpose described.

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

SAMUEL W. HEMPSTED.

Witnesses:

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R. E. SAFFORD.