

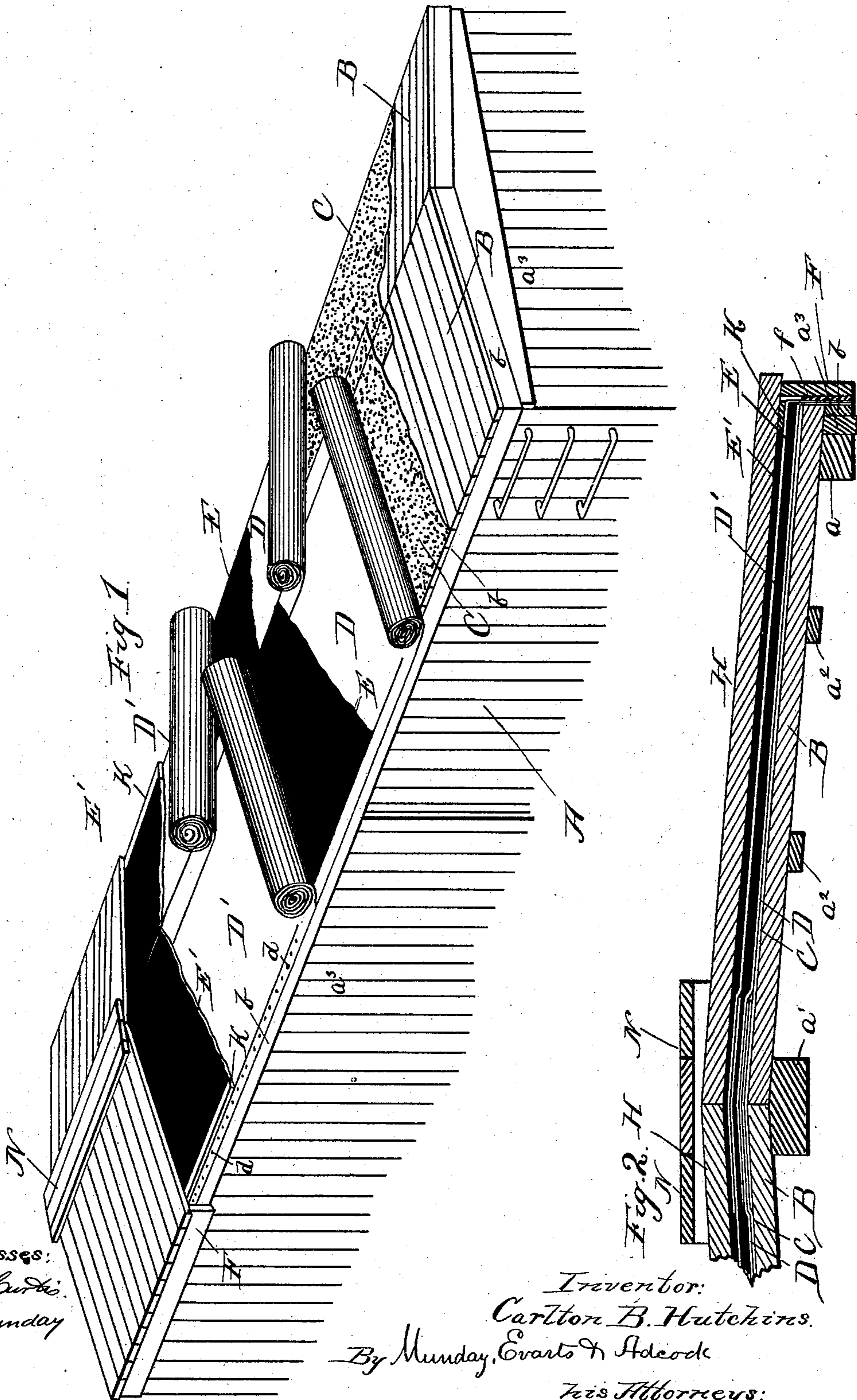
(No Model.)

C. B. HUTCHINS.

CAR ROOF.

No. 372,316.

Patented Nov. 1, 1887.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## CAR-ROOF.

SPECIFICATION forming part of Letters Patent No. 372,316, dated November 1, 1887.

Application filed May 14, 1887. Serial No. 238,201. (No model.)

*To all whom it may concern:*

Be it known that I, CARLETON B. HUTCHINS, a citizen of the United States, residing in Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Car-Roofs, of which the following is a specification.

My invention relates to improvements in car-roofs, and more particularly to roofs made in part of roofing composition.

The object of the invention is to provide an efficient, strong, and durable car-roof of a simple construction.

In the accompanying drawings, which form a part of this specification, and in which similar letters of reference indicate like parts, Figure 1 is a perspective view of a car-roof embodying my invention, the roof being shown in the several stages of construction at different parts of its length. Fig. 2 is an enlarged cross-section of the same, the thickness of the several layers of felt, roofing composition, and boards being somewhat exaggerated in order to show the same more clearly.

In the drawings, A represents a car;  $a$ , the side plates;  $a'$ , the ridge center purlin, and  $a''$  the intermediate purlin.

B is the under or foundation layer of boards of the roof, and  $b$  is the cornice.

The under course of boards B are sawed off even with the cornice  $b$  around the car. The cornice  $b$  is nailed directly to the vertical siding-boards  $a''$  of the car. Two sheets of dry felt, C C, are first applied or laid directly upon the roofing-boards B, each reaching from the edge of the roof up over the ridge, and lapping at the ridge preferably about four inches. Then two sheets of saturated felt, D D, are applied, which project over the edge of the roof, preferably two inches, and lap four inches at the ridge. A coat of roofing composition, E, is then applied from within two inches of the edge of the felt up to the ridge on both sides, and then the two sheets of saturated felt, D' D', are applied directly on top the roofing-composition coat E, the edges of the sheets D' D' being just even with the sheets D D. The two thicknesses of saturated felt, D' D', which project over the edge of the roof two inches,

are bent down and tacked to the cornice with round tins and nails  $d d$ , preferably about two inches apart. Then a marginal strip of wood, K, one inch wide and one-quarter of an inch thick, is nailed around the edge of the roof with small nails. The nails should be driven about six inches apart. Then I apply a coating of roofing compound, E', over the whole roof, preferably about one-eighth of an inch thick. The outside cornice, F, is then applied, being blocked out from the cornice E one-quarter of an inch by small blocks  $f f$ , preferably about two inches square by one-quarter of an inch thick, and nailed to cornice  $b$ . The blocks  $f f$  should be placed about eighteen inches apart. The upper edge of cornice F, when applied, should be just even with the top of the wooden strips K. The top course of boards, H, which are preferably matched boards, are then applied, and should project over the cornice F about one inch and a half. Each board should be nailed at the lower edge or plate with three three-and-one-quarter-inch wire nails, and at the ridge and intervening ribs or purlin with two wire-nails of the same length. The upper course of boards being embedded in the roofing composition, and thus allowing no water to get under them, preserves them from decay.

The object of the dry felt under the saturated felt is to absorb any composition or oils which might strike through the saturated felt which would otherwise discolor the under course of boards. The object of wooden strips K is to prevent any composition from running out and dripping down on cornice E from the weight of the upper course of boards and pressure when nailing the same.

The several coatings of roofing compound, owing to its plastic and yielding character, will closely embrace the nails and effectually prevent any leaks around the nails. The roofing compound also prevents the nails from rusting, and serves as a preservative for the roofing-boards H, with which it is in contact. N N are the longitudinal ridge or running boards.

The roofing compound which I use, or prefer to use, for the several coatings E E' and

for saturating the felt is fully described in my Patent No. 333,467, of December 29, 1885, and the composition of the same need not therefore be here described.

5 The several coatings or layers of roofing compound, in connection with the layers of felt and the layer or course of roofing-boards embedded in the outer layer of roofing compound, produce not only a perfectly water-  
10 tight and water-proof roof, but an exceedingly strong and durable roof, which it is almost impossible to rack or injure by any ordinary strains or jars to which freight cars are generally subjected.

15 It is my experience that the layers of roofing compound, when combined in the manner of my invention with the roofing-boards and felt, add almost as much strength and rigidity to the roof as the roofing-boards themselves.

20 The roofing compound, when it becomes cool or hard, remains somewhat plastic and flexible or elastic, but is still sufficiently tenacious, like rubber or leather, to add very materially to the strength and stiffness of the  
25 roof as a whole when the outer layer of roofing-boards are nailed down upon it.

I hereby disclaim as not of my invention the roofs shown and described in Patent No. 209,131, to Tobias New, of October 22, 1878,  
30 and Patent No. 313,971, to T. H. White, of March 17, 1885.

I claim—

1. The car-roof having a central longitudinal ridge, and composed of an under layer of  
35 boards, intermediate layers of felt and roofing compound, and an outer layer of roofing-boards directly in contact with the upper layer of roofing compound, and longitudinal strips K along the eaves of said roof, embedded in  
40 the roofing compound, and upon which the ends of said outer roofing-boards rest, said outer layer of roofing-boards being composed of a series of wood boards extending longitudinally from the ridge of the roof to the  
45 eaves thereof, substantially as specified.

2. The freight-car roof, comprising under layer of boards B, layers of felt C C, overlapping each other at the ridge of the roof and extending each in one piece to the edges of

the roof, layer of saturated felt in two integral  
50 pieces, D D, projecting over the edges of the roof and overlapping each other at the ridge, coating of roofing compound E, layer of saturated felt in two integral pieces, D D, projecting over the edges of the roof and overlapping  
55 at the ridge, upper coating of roofing compound E', and outer layer of boards H, extending longitudinally from the ridge to the eaves, in contact with said upper coating E, substantially as specified. 60

3. The freight-car roof, comprising under layer of boards B, layers of felt C C, overlapping each other at the ridges of the roof and extending to the edges of the roof, layer of saturated felt D D projecting over the edges of  
65 the roof and overlapping each other at the ridge, coating of roofing compound E, layer of saturated felt D' D', projecting over the edges of the roof and overlapping at the ridge, upper coating of roofing compound E', marginal strips K, and outer layer of boards H,  
70 in contact with said upper coating E, said layers of felt being each composed of two integral pieces which overlap each other at the ridge and extend to the eaves, and said outer  
75 layer of roofing-boards being composed of wood boards extending longitudinally from the ridge to the eaves, substantially as specified.

4. The freight-car roof, comprising under  
80 course of boards B, cornice b, felt C C, overlapping each other at the ridge of the roof, saturated felt D D, lapping down over cornice b at the edges of the roof and overlapping each other at the ridge, coating of roofing  
85 compound E, saturated felt D' D', lapping over and nailed to cornice b at their outer edges and overlapping each other at the ridge, upper coating of roofing compound E', marginal strips K, outer course of roofing-boards  
90 H, in contact with said upper coating of roofing compound, and outer cornice F, substantially as specified.

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Witnesses:

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