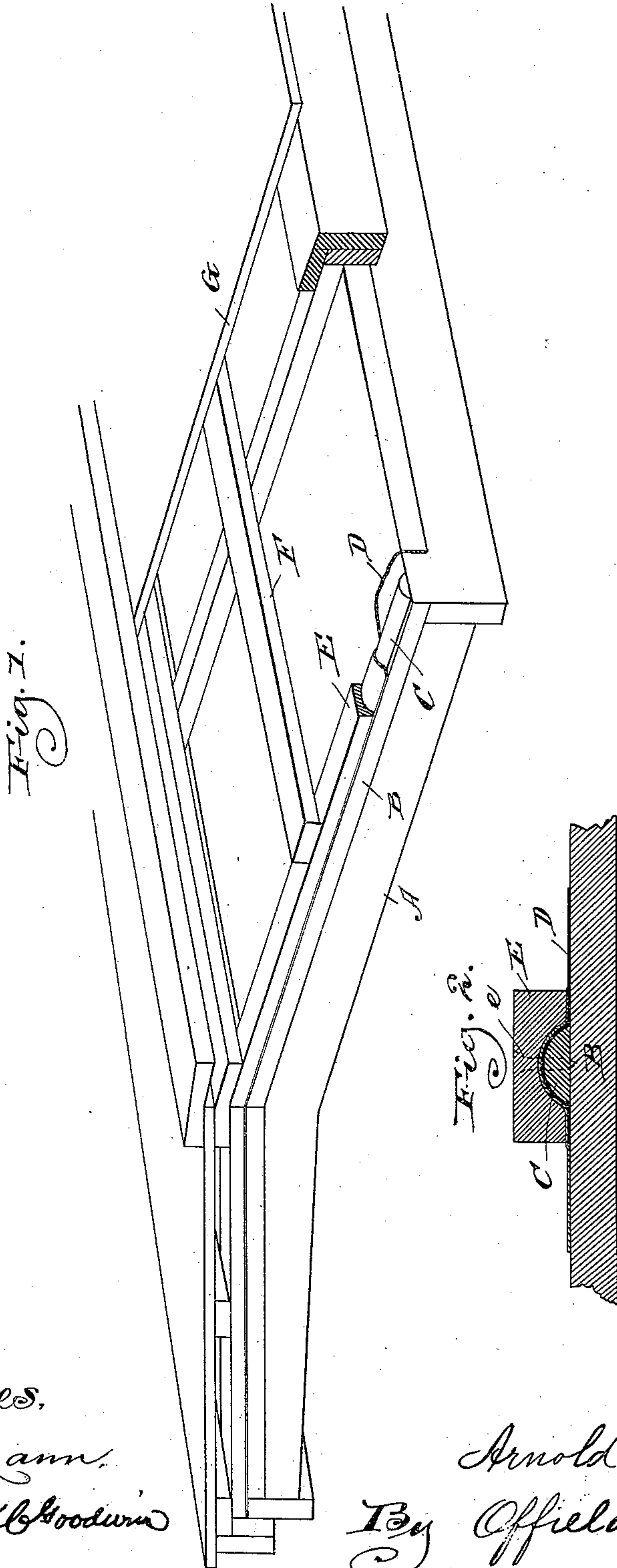


(No Model.)

A. W. ZIMMERMAN.
CAR ROOFING.

No. 446,244.

Patented Feb. 10, 1891.



Witnesses,
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UNITED STATES PATENT OFFICE.

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OF ONE-HALF TO F. W. BIRD & SON, OF WALPOLE, MASSACHUSETTS.

CAR-ROOFING.

SPECIFICATION forming part of Letters Patent No. 446,244, dated February 10, 1891.

Application filed June 13, 1890. Serial No. 355,344. (No model.)

To all whom it may concern:

Be it known that I, ARNOLD W. ZIMMERMAN, a citizen of the United States, residing at Washington Heights, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Roofing, of which the following is a specification.

My invention relates to a car-roofing wherein a lining of paper, cloth, or other flexible material is secured over the roof-boards of cars, and the invention is particularly applicable to the construction of what are termed "refrigerator-cars;" and the object of my invention is to so secure the paper or cloth lining to the sheathing of the car as to prevent the leakage therethrough of water which finds its way through the covering, following the nails or other fastenings. This object I accomplish by securing to the sheathing strips over which the paper or similar lining is spread, and the nails or other fastening devices are driven through the paper and through or into these strips. By this means the upper end of the perforation is above the plane of the body of the material, and consequently water which finds its way through the outer covering of the car is prevented from entering these apertures and following the nails through the lining. Over these strips are secured cap-pieces which are grooved out on their lower sides, so as to clamp the paper securely upon the strips and to cover the fastenings, thereby making a better joint. Upon these cap-pieces are secured the purlins which support the outer roof-boards.

In the accompanying drawings, Figure 1 is a perspective view of a portion of the car-roof, partly in section; and Fig. 2 is a sectional detail through the sheathing lining and strip, showing also a cap-piece fitting over the strip and a fastening-screw, the latter being shown in dotted lines.

In the drawings, A represents the carlings, and B the sheathing of the roof. Upon this sheathing at suitable intervals, are placed strips C, extending from the edge to the comb of the roof, and which strips are preferably of the form known as "half-round," as when

paper is used for a lining it can be the more readily conformed to a strip having a rounded surface without breaking.

The lining D, which may be of paper, cloth, or other suitable flexible material, is then spread over the sheathing and strips and fitted closely to the latter, and then a cap E, having a longitudinal groove in its lower side of the configuration of the strip, is applied over the strip and paper or other lining and fastened by means of nails or screws, as indicated by the dotted lines *e*, Fig. 2, the fastening perforating the lining on its passage into the strip. It will be observed that the paper or other lining at the point where it is perforated by the passage of the securing nails or screws is elevated above the plane of the body of the paper lying upon the sheathing, and therefore water which may find its way through the outer covering is prevented from passing through the lining, the latter being impermeable in its level portion.

The purlins F may be placed across the cap-pieces, and upon these are secured the outer roof-boards G. The lining can be obtained in sheets of sufficient size to cover one-half of the car-top—i. e., from the edge of the roof to the comb—the sheet being placed with its greatest length longitudinally of the car; but if a plurality of pieces be used I prefer to form the joints beneath the cap, as the water is thereby the better excluded.

A car constructed as above described will be practically air and water tight, and the circulating-air space between the outer covering and the lining will assist to prevent the radiation of heat.

I claim—

1. The herein-described improvement in car-roofing, comprising, in combination with the sheathing-strips secured thereon and extending from the edge of the roof to the comb or ridge, a lining of paper or like flexible material secured over said strips by fastenings passed through the lining at its elevated portion and into the strips, and cap-pieces extending also from the edges of the roof to the comb, having grooves in their lower faces and adapted to fit closely upon the strips and

cover the fastenings, and purlins secured upon the cap-pieces to support the outer roof-covering, substantially as described.

2. The herein-described improvement in
5 car-roofing, comprising, in combination with the sheathing, rounded strips secured thereon and extending from the edge of the roof to the comb or ridge, a lining of paper or like flexible material secured over said strips by
10 fastenings passed through the lining at its elevated portion and into the strips, and cap-pieces extending also from the edges of the roof to the comb, having grooves in their lower faces and adapted to fit closely upon
15 the rounded strips and cover the fastenings, and purlins secured upon the cap-pieces to support the outer roof-covering, substantially as described.

3. The herein-described improvement in
20 car-roofing, comprising, in combination with

the sheathing, rounded strips secured thereon and extending from the edge of the roof to the comb or ridge, a lining of paper or like flexible material, said lining consisting of continuous sheets, each adapted to cover one
25 side of the car-roof from the edge thereof to the comb or ridge and secured over said strips by fastenings passed through the lining at its elevated portion and into the strips, and cap-pieces extending also from the edges of the
30 roof to the comb, having grooves in their lower faces and adapted to fit closely upon the rounded strips and cover the fastenings, and purlins secured upon the cap-pieces to support the outer roof-covering, substantially
35 as described.

ARNOLD W. ZIMMERMAN.

Witnesses:

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