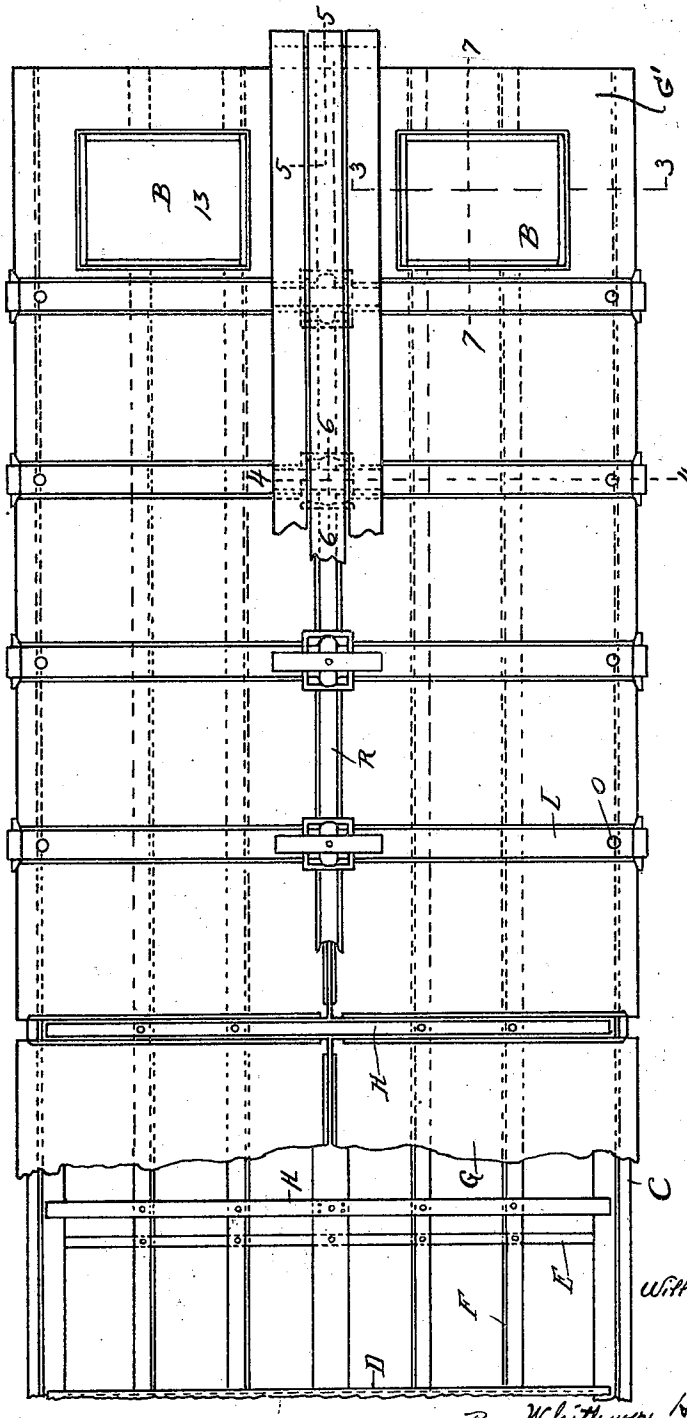
Nov. 1, 1927. 1,647,382

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REFRIGERATOR CAR ROOF

Filed May 7, 1923 4 Sheets-Sheet 1

Fig. 1



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Fig. 2.

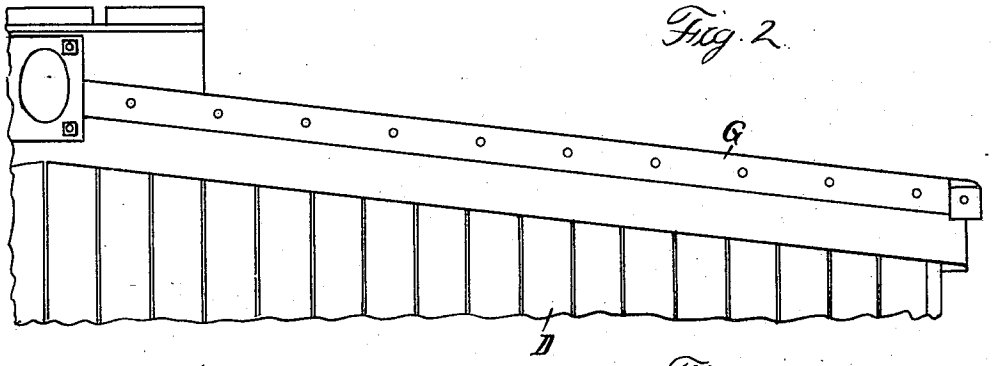


Fig. 3.

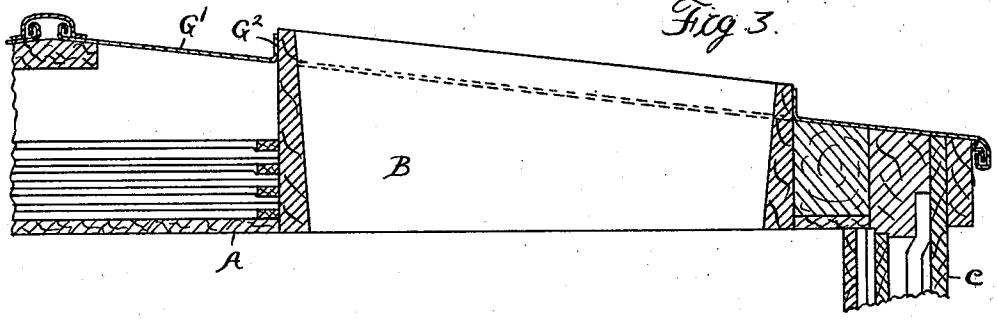
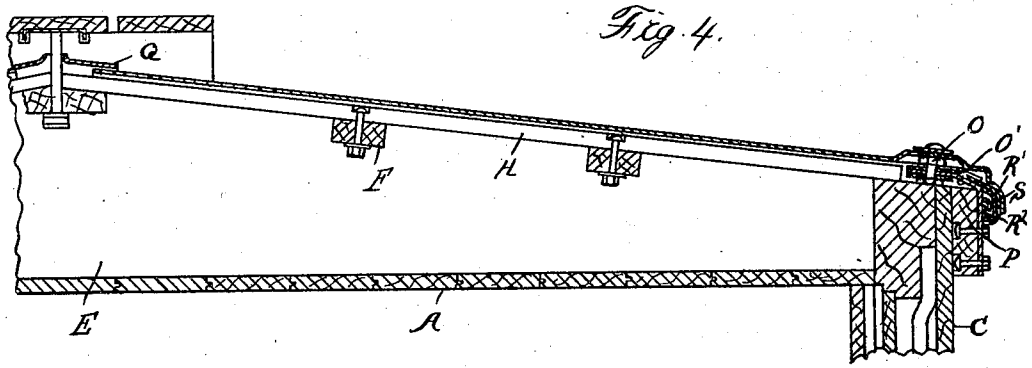


Fig. 4.



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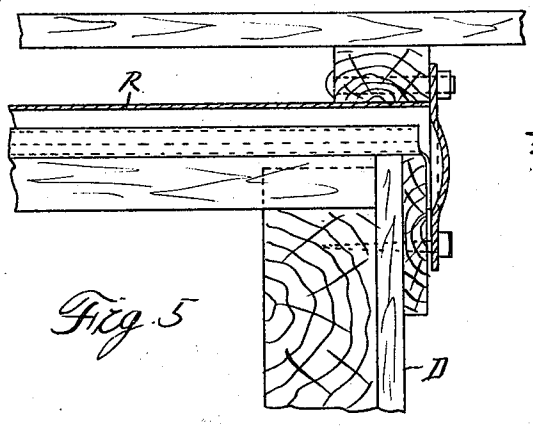


Fig. 5

Fig. 6.

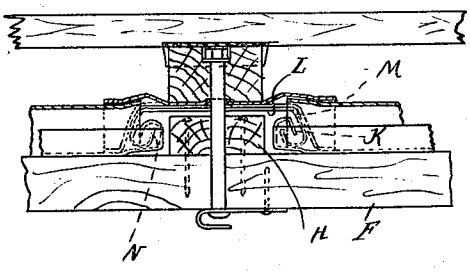
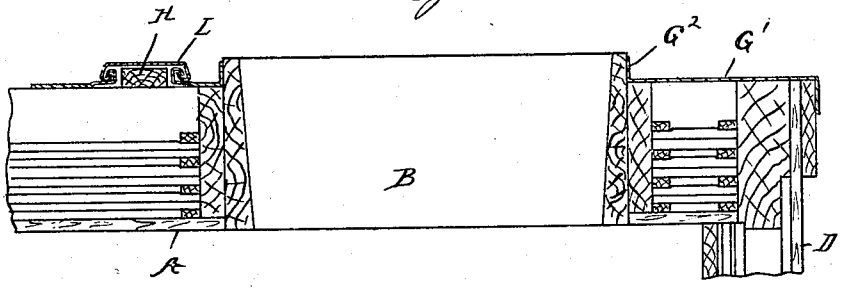


Fig. 7.



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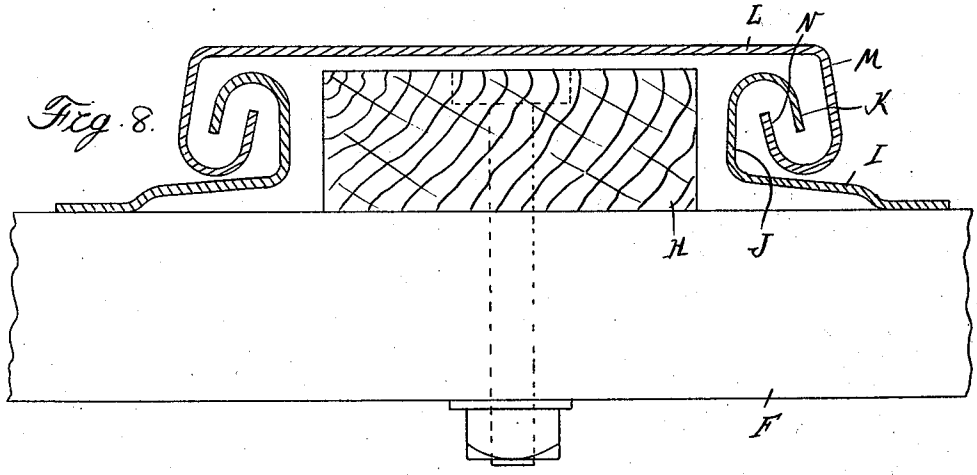
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W. D. THOMPSON

REFRIGERATOR CAR ROOF

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Fig. 8.



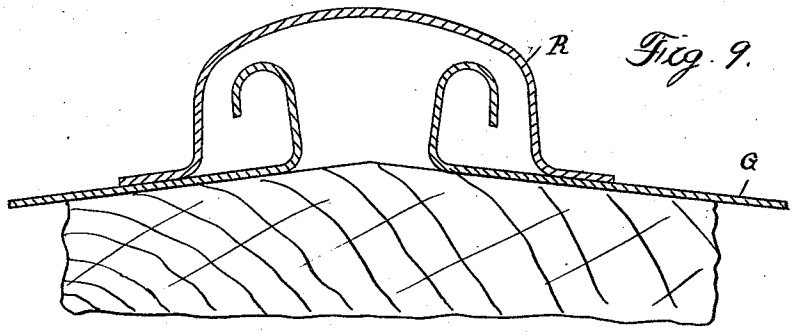
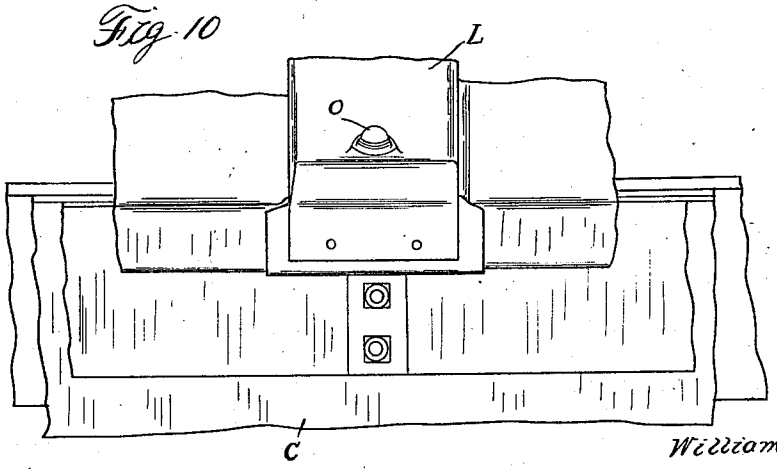


Fig. 9.

Fig. 10



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Patented Nov. 1, 1927. 1,647,382

UNITED STATES PATENT OFFICE.

WILLIAM D. THOMPSON, OF DETROIT, MICHIGAN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO HUTCHINS CAR ROOFING COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF DELAWARE.

REFRIGERATOR-CAR ROOF.

Application filed May 7, 1923. Serial No. 637,348.

The invention relates to car roof constructions and more particularly to a construction applicable to refrigerator cars. It is the object of the invention to obtain a durable and weatherproof construction of roof and one which can be easily and quickly repaired in any part. To this end the invention consists in the construction as hereinafter set forth.

In the drawings:

Figure 1 is a plan view partly broken away, showing my improved construction of refrigerator car roof;

Figure 2 is an end elevation;

Figure 3 is a cross-section on line 3—3 of Figure 1;

Figure 4 is a similar section on line 4—4 of Figure 1;

Figure 5 is a longitudinal section on line 5—5 of Figure 1;

Figure 6 is a longitudinal section on line 6—6 of Figure 1;

Figure 7 is a longitudinal section through one of the hatches;

Figure 8 is a section through the mullion weatherproofing cap through the adjacent roofing sheets;

Figure 9 is a section through the rigid cap;

Figure 10 is a side elevation of a small portion of the roof.

The refrigerator car is of known design, being provided with a ceiling A with hatchways B opening upward therethrough. The sides and ends of the car are provided with the side and end plates C and D and carlines E and purlins F constitute the skeleton frame for supporting the roof.

To maintain the desired low temperature within the car, it is provided with thorough heat insulation at both the sides and above the ceiling. This prevents access to the roof structure from the interior of the car and therefore interferes with the repair of any roof permanently attached to the roof frame. Heretofore certain constructions of refrigerator cars have been provided with riveted rigid metallic roofs, but, for the reasons just stated, repair work on such roofs is difficult, involving the removal of the entire roof for the repair of any part thereof.

With the present invention the difficulty is overcome by employing a sectional metallic roof so constructed that any one of the sections may be removed independently and therefore may be easily repaired and replaced. The construction has the further advantage that a flexible roof is substituted for the rigid roof, which, being relieved from weaving stresses, will have a greater length of life.

The metallic roof comprises a series of roofing sheets G which overlie the purlins F extending from ridge to eaves. These sheets are spaced from each other a sufficient distance to receive a mullion H which is preferably a wooden strip secured to the purlins and is of a width providing clearance between the same and the adjacent edges of the roofing sheets. The roofing sheets are formed with marginal side portions I in a slightly raised plane with upturned flanges J and return-bent flanges K. L are weatherproofing caps having downturned flanges M and return-bent flanges N for telescopically engaging the return-bent flanges on the sheets and for forming a weatherproof joint. Near the eaves the caps L are pivotally secured by bolts O. The brackets O′, are preferably bolted to the facia P, and at the ridge said caps are secured by junction caps Q which also secure in position the ridge caps R. Thus the individual sheets are independently adjustable to take care of any stresses due to the weaving of the car frame and whenever it is desired to remove a sheet, this may be easily accomplished by merely detaching the caps L.

In the portion of the roof through which the hatch openings B extend the roofing sheet G′ is apertured for the passage of the hatch lining and upturned flanges G^2 on said sheet surrounding the hatch form a weatherproof joint therewith. The hatch opening may be closed by any suitable construction of lid (not shown). At the eaves the sheets G have downturned flanges R′ which are return-bent at R^2 to engage a return-bent flashing strip S nailed or otherwise secured to the facia P. This, while making a thoroughly weatherproof joint, does not interfere with the quick removal of the sheets when necessary.

In use, whenever there is occasion to repair any part of the roof, the defective sheet or cap is detached and either replaced by a substitute part or may be repaired and again secured in position.

What I claim as my invention is:

1. The combination with a refrigerator car provided with a ceiling, heat insulation thereabove, and a skeleton roof supporting frame, of an all-metallic eaves to ridge roof supported on said skeleton frame and formed of independently removable sections, and means accessible from outside of the said car for securing the said sections in position.

2. In a refrigerator car, the combination with a skeleton roof frame having a ceiling therebeneath and heat insulation above said ceiling, of an all-metallic eaves to ridge roof superposed on said frame and comprising a plurality of independently removable roofing sheets, and caps for weatherproofing and securing said sheets to the frame, and means accessible from outside of the said car for securing the said caps in position.

3. In a refrigerator car, the combination with a skeleton roof frame including carlines and purlins, a ceiling beneath said frame and heat insulation above said ceiling, of an all-metallic eaves to ridge roof supported on said frame comprising independently removable roofing sheets having upturned return-bent side flanges, downturned flanges at the eaves and upturned flanges at the ridge, mullions secured to said roof frame intermediate adjacent sheets, weatherproofing caps embracing said mullions and provided with downturned and return-bent flanges for telescopically engaging the return-bent flanges of said roofing sheets, and means accessible from outside of the said car for securing said weatherproofing caps and thereby retaining said roofing sheets.

4. In a refrigerator car, the combination with a skeleton roof frame, a ceiling beneath said frame provided with hatch openings and lining members for said hatch openings projecting upward between members of the skeleton frame, of an all-metallic eaves to ridge roof overlying said frame formed of independently removable roofing sheets, and weatherproofing caps for the joints between the sheets, and means accessible from outside of the said car for securing the said caps in position, one or more of said sheets being apertured in registration with said hatch openings to surround the lining thereof and having upturned flanges adjacent to said lining.

5. In a refrigerator car, the combination with a skeleton roof frame having a ceiling therebeneath and heat insulation above said ceiling, of an all-metallic eaves to ridge roof superposed on said frame and comprising a plurality of independently removable load-sustaining roofing sheets, caps for weatherproofing and securing said sheets to the frame, and means accessible from outside of the said car for securing the said caps in position.

6. In a car, the combination with a roof supporting frame including side plates, of roofing sheets supported upon said frame and having upturned side flanges with weatherproofing caps embracing said side flanges, brackets having a portion at the outer sides of said side plates and means for removably and pivotally securing said weatherproofing caps to said brackets.

In testimony whereof I affix my signature.

WILLIAM D. THOMPSON.